285 - 293

ORCHIDEAE

XI

ORCHIDEAE

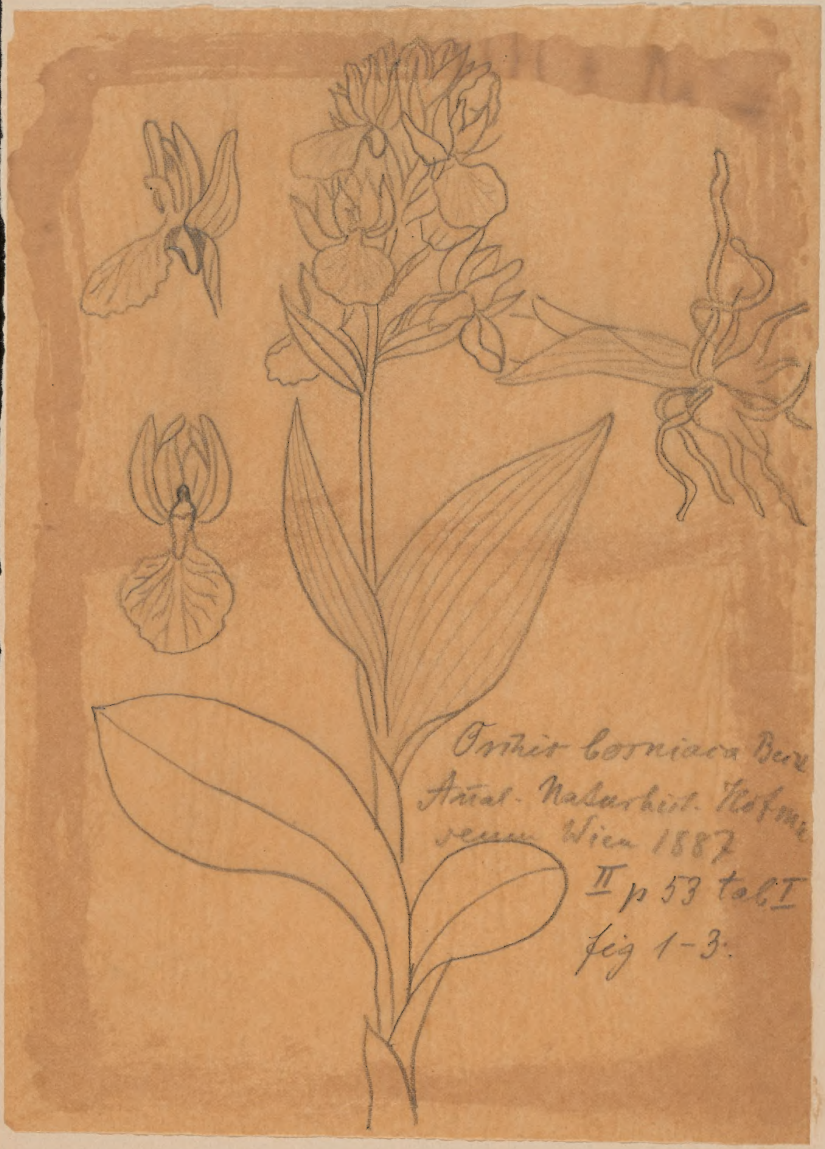
XII

4120

Chicago Botanic Garden
2002

299. Orchis L.

Orchis rambeorina L.


Orchis Cornuta Berg
Atlas. Naturhist. Hofmus
Neues Wien 1887
II p 53 tab I
fig 1-3.

Regel. Gartenflora 1856. V. 148.

Orchis maculata × Gymnadenia odoratissima.
Am Utoberg bei Zürich 1 Mal von E. Regel gefunden.

M.S. del. J.N. Fitch lith. Vincent Brooks, Day & Son Imp.

Ophrys monophylla

L. Reeve & Co. London.

1346. Earina. Lindl.

1

300

1538 Serapias L.

SERAPIAS *Sw. Rich.*

Serapie.

(Helleborine Pers. Serapias Linn. ex parte.)

Syst. nat. Class Monocotyledoneae, Fam. Orchideae, Trib. Ophrysinae.
Syst. Linn. Class. XX. Ord. I. Gynandria Monandria.
Bartl. Ord. pl. p. 56. *Kunth* Handb. p. 287.
Lindl. Einl. p. 384.

CHAR. GEN.

Flores sessiles, spicati et bracteati.

Perianthium coloratum; tubus germini adnatus; limbus *exterior* e foliolis tribus, in galeam cucullatam magnam connatis, formatus; *interioris* foliola superiora e basi dilatata longe cuspidata; Labellum inferum magnum, basi bilamellatum sed non calcaratum, subtrilobum, lobis lateralibus assurgentibus, lobo terminali (s. Epichilio R.) majori deflexo varie formato, in alabastro erecto, marginibus inflexis.

Gynostemium erectum, apice *in foliolum productum longe cuspidatum*; Anthera adnata, biloculari ut in Orchide, basi bursicula uniloculari instructa. Processus inter antherae loculos compressus, prominens. Pollinaria duo, caudiculata, caudiculis retinaculo unico iunctis. Pollen sectile. Staminodia obsoleta.

Stigma intra antheram situm, oblongum. Germen *non contortum*, oblongum, obtuse-trigonum uniloculare, multiovulatum.

Fructus: Capsula infera, polysperma, ut in caeteris Ophrysinis.

Plantae herbaceae Europae et Africae borealis incolae; flores magni, speciosi; radices bituberatae.

Linn. Gen. pl. ed. Spr. n. 3306.
Rich. Mem. du Mus. IV. p. 47.
Reich. Fl. excurs. p. 129.

Adn. *Serapias* ab omnibus generibus affinibus gynostemio longe cuspidato facile distinguitur.

EXPLICATIO FIGURARUM.

1. *Serapias oxyglottis W.*, cum floribus, magn. nat.
2. Alabastrum.
3. Laciniae perianthii exteriores in galeam connatae.
4. Labellum cum laciniis perianthii interioris.
5. Gynostemium a fronte visum, b. bursicula, st. stigma, magn. auctum.
6. Idem, a latere visum.
7. Idem, a dorso visum.
8. Pollinaria.
9. Capsula immatura, magn. nat.
10. Sectio transversalis, magn. aucta.

SERAPIAS Sw.

7(4r)

302.

Aphrys

Ophrys fuciflora Haller

OPHRYS *R. Br. Rich.*

Ragwurz.

Syst. nat. Class. Monocotyledoneae, Fam. Orchideae Trib. Ophrysinae.
Syst. Lin. Class. XX. Ord. I. *Gynandria Monandria.*
Bartl. Ord. plant. p. 56. *Kunth* Handb. p. 287.
Lindl. Einl. p. 384.

CHAR. GEN.

Flores sessiles, spicati et bracteati.

Perianthii laciniae exteriores patentes, duae interiores angustissimae erectae; labellum patens, basi muticum (non calcaratum), ut plurimum holosericeum, varie pictum, et non raro basi gibbis prominentibus notatum, trilobum, lobo medio terminali maiori bifido vel appendiculato, praefloratione erecto et inflexo. Gynostemium brevissimum. Anthera adnata, ut in antecedentibus, obtusa, bilocularis, *loculis ad basin usque discretis.* Pollinaria caudiculata, ut in reliquis Ophrysinis sed retinacula basi bursiculis duabus distinctis, inclusa. Processus rostellaris inter antherae loculos nullus. Staminodia minuta. Pollen sectile ut in affinibus. Stigma cordatum vel subquadratum, viscoso-lucidum. Germen oblongum non contortum.

Fructus: Capsula costata, unilocularis, polysperma et semina ut in generibus antecedentibus constructa.

Plantae herbaceae, zonae temperatae et calidioris incolae, radicibus bituberatis instructae;

flores forma et colore insignes, insectorum imagines non raro referentes.

Lin. Gen. plant. ed. Spr. n. 3307.
Rich. Orch. Eur. l. c. p. 48.
Reich. Fl. Germ. exc. p. 128.

Adn. Genus eximium, cum *Orchidibus* veris centrum huius sectionis exhibens. A generibus proxime affinibus germine recto (non contorto), labello mutico et antherae loculis discretis recedit.

EXPLICATIO FIGURARUM.

1. *Ophrys myodes* L. magn. nat.
2. Alabastrum cum bractea a latere visum.
3. Idem reflexis laciniis lateralibus del. ut labellum inflexum a dorso conspiciatur.
4. Flos a fronte visus.
5. Idem, magn. auctus.
6. Gynostemium et sitgma.
7. Pollinarium.
8. Idem, magn. magis auctum.
9. Germen cum bractea et laciniis perianthii externi.
10. Sectio eius transversalis.
11. Capsula matura, magn. nat.
12. Eadem, magn. aucta.
13. Valvula capsulae cum spermophoro, magn. nat.
14. Eadem, magn. aucta.
15. Sectio capsulae transversalis.
16. Semen, magn. auctum.
17. Idem, magis auctum.
18. Radix, magn. nat.
19. Flos. *Ophr. fuciflorae* Hall. magn. nat.

Fam. Orchideae. Trib. Ophrysinae.

OPHRYS R.Br.

Separatabzug aus den Verhandlungen

des

botanischen Vereins der Provinz Brandenburg.

XIX.

Herr P. Ascherson legte einige neuerdings bekannt gewordene, seltnere und neue Arten der märkischen Flora vor (Vgl. Sitzb. d. Bot. Ver. 1877. S. 80) und besprach hierauf unter Vorlage von getrockneten Exemplaren und zweier sorgfältig nach der Natur angefertigten Farbenskizzen von Herrn F. Kurtz[1]) einen bisher aus Deutchland nicht bekannten Bastard von *Ophrys aranifera* Huds. und *O. fuciflora* (Seg.) Rchb.

Am 10. Mai 1877 hatte Vortr. die Freude, die ausgezeichnete Sammlung europäischer Orchideen in voller Blüthe zu sehen, welche Herr W. Lauche mit dem Erfolge, der seine mit umfassender Sachkenntniss geleiteten und von nie verlöschender Liebe zur Sache getragenen Bestrebungen stets begleitet, in Cultur erhält. Unter den zahlreichen *Ophrys*-Formen, welche er zum Theil selbst ihren natürlichen Standorten in Thüringen entnommen hatte, machte Herr Lauche den Vortr. auf einige aufmerksam, die ihm zu keiner der beschriebenen Arten zu gehören schienen, und für die er daher den Verdacht einer hybriden Abstammung von den benach-

[1]) Dieselben sind, nebst einer von Herrn W. Lauche's Meisterhand herrührenden Abbildung der ganzen Pflanze, auf Tafel VI. der Monatsschr. des Vereins zur Bef. des Gartenbaues in den Kgl. Preuss. Staaten, Oct. 1878 veröffentlicht, woselbst sich eine inhaltreiche Mittheilung des Herrn W. Lauche über die Cultur europäischer Orchideen findet.

barten Arten *O. muscifera* Huds., *O. aranifera* Huds. und *O. fuciflora* (Seg.) Rchb. (= *arachnites* Murr.) aussprach. Die weitere, genauere Ermittelung des Sachverhalts übertrug er mit schon so oft erprobter Freundlichkeit dem Vortr., welcher sich bald mit Genugthuung überzeugte, dass Herrn Lauche's Deutungen vollkommen gegründet waren. Von den dem Vortr. übergebenen drei Formen erwies sich die eine als ein Bastard von *O. muscifera* und *O. aranifera*, der am nächsten der von G. Reichenbach in seiner classischen Ikonographie der europäischen Orchideen (Icones florae germ. et helv. Vol. XIII. XIV. pag. 79 tab. 113 I.) beschriebenen und abgebildeten *O. hybrida* Pokorny zu stehen scheint. Die beiden anderen, einander sehr ähnlichen Formen sind unzweifelhaft aus einer Kreuzung der *O. aranifera* mit *O. fuciflora* hervorgegangen; einen Bastard dieses Ursprungs fand Vortr. damals in der von ihm zu Rathe gezogenen Litteratur nicht beschrieben, bis ihm unmittelbar vor dem Drucke dieser Mittheilung durch die Güte der Herren Dr. P. Magnus und Dr. Bonnet eine ebenso seltene als werthvolle kleine Schrift bekannt wurde: Recherches sur quelques Orchidées des environs de Toulon[1]), par M. Ch. Grenier. Extrait des Mémoires de la Société d'Emulation du Doubs 1859. In dieser Abhandlung, in der der verstorbene hochverdiente französische Florist eine Anzahl Orchideen nach lebenden Exemplaren, die ihm der damalige Director des „Jardin botanique de la marine impériale à St. Mandrier, près de Toulon-sur-Mer" Mr. Philippe übersandte, beschrieben hat, findet sich p. 9 eine *Ophrys arachnitiformis* Gren. et Phil. aufgestellt, welche, wie wir weiter unten sehen werden, dem von Herrn Lauche cultivirten Bastarde so nahe steht, dass einen gleichen Ursprung für dieselbe vorauszusetzen wohl nicht zu gewagt erscheint.

Ausser *O. hybrida*, welche Pokorny am Bisanberge bei Wien 1846 entdeckte, sind in dem erwähnten Werke von G. Reichenbach noch zwei andere Bastardformen der genannten drei Arten aufgeführt: *O. apicula* J. C. Schmidt (l. c. p. 79 tab. 102. fig. 6—9), ebenfalls aus der Kreuzung von *O. muscifera* und *O. aranifera* entstanden, vom Autor bei Holderbach im Canton Aargau 1832 aufgefunden, und *O. devenensis* Rchb. fil. (l. c. p. 87 tab. 102 nebst fig. 1—4), ein von dem gefeier-

[1]) Nicht Toulouse, wie Nyman (Syll. fl. eur. suppl. p. IV) unrichtig citirt.

ten Monographen der Familie bei Les Devens bei Bex im Kanton Waat 1843 zwischen *O. muscifera* und *O. fuciflora* beobachteter Bastard.

Die Gattung *Ophrys* zeichnet sich vor den übrigen, unter einander sehr nahe verwandten Gattungen der Gruppe, welche ihren Namen führt, noch mehr durch das eigenthümliche Aussehen ihrer Blüthen aus, als durch das technische Merkmal der zwei getrennten Beutelchen (bursiculae), in welche die Stieldrüsen der Pollenmassen, die sog. retinacula, eingeschlossen sind. Diese Blüthen zeigen eine auffallende Aehnlichkeit mit manchen Insekten (in Linné's Sinne), eine Aehnlichkeit, die von altersher auch in der Nomenclatur ihren Ausdruck gefunden hat. Linné sah alle Arten, welche jetzt allgemein (z. B. in Reichenbach's Werke) zu *Ophrys* gerechnet werden, als Formen einer Art, *O. insectifera*, an; seine übrigen *Ophrys*-Arten gehören grösstentheils nicht einmal zu der heutigen Tribus der Ophrydeen.

Unter den jetzigen Benennungen und Synonymen von Arten und Formen sind die Namen *apicula, apifera, arachnites, arachnoides, araneola, aranifera, bombifera, bombyliflora, bremifera, crabronifera, fucifera, fuciflora, muscaria, muscifera, myodes, oestrifera, sphegifera, tabanifera, tenthredinifera, vespifera* (die *gesperrt* gedruckten sind von Reichenbach für Arten angenommen) aus der Entomologie, nur der Name *Scolopax* einem weniger gerechtfertigten Vergleiche aus der Ornithologie entlehnt. Diese Insekten-Aehnlichkeit, welche selbst dem ungeübten Auge des Anfängers die Zugehörigkeit zu dieser Gattung sofort verräth (höchstens die *Serapias*-Arten erinnern einigermaassen in ihren Blüthen an unsere Gattung, sind aber habituell durch die grossen gefärbten Tragblätter der Blüthen leicht zu unterscheiden), wird namentlich durch die eigenthümliche braune, rothe oder gelbliche Färbung und sammetartige Behaarung der Lippe (labellum) hervorgebracht, die unverkennbar an den behaarten Hinterleib vieler Insekten, namentlich *Hymenoptera*, erinnert. Noch thierähnlicher, so zu sagen, erscheinen die in der Regel auf dieser Lippe befindlichen kahlen Stellen, deren oft bläulich-graue Farbe und glänzende Oberfläche an die geschorene Haut langhaariger Thiere, z. B. eines schwarzen Pudels, erinnert. Für die einzelnen Arten sind diese kahlen Stellen (signa, liturae)

sehr charakteristisch. Die seitlichen äusseren Perigonblätter (sepala) stellen alsdann die Flügel, und die seitlichen inneren (petala) die Fühlhörner des Insekts dar.

Die Linné'sche Ansicht über den specifischen Werth der *Ophrys*-Formen, welche merkwürdiger Weise auch neuerdings in dem kürzlich verstorbenen englischen Botaniker Moggridge, der diese Gattung Jahre lang an der ligurischen Küste studirte, einen Vertheidiger gefunden hat, kann als ein vollgültiges Zeugniss für ihre nahe Verwandtschaft, also für die Natürlichkeit der heutigen Gattungsbegrenzung gelten; sie erinnert an die ähnlichen Anschauungen des grossen schwedischen Naturforschers über die *Medicago*-Formen. Indess bei *Ophrys* wie bei *Medicago* hat man eine Anzahl wichtiger und zum Theil auch leicht aufzufindender Merkmale in Betracht gezogen, durch welche sich das anscheinende Chaos der Formen sicher und ohne allzu grosse Schwierigkeiten in eine Anzahl scharf geschiedener Arten gliedern lässt. Als solche gelten bei Reichenbach hauptsächlich die Form und Bekleidung der Petala, die bei manchen Arten kahl, bei anderen sammetartig behaart sind; die Form der Lippe (bei manchen ungetheilt, bei anderen dreilappig), die Richtung ihrer Ränder, das Vorhandensein oder Fehlen resp. die Richtung eines kahlen Anhängsels an der Spitze der Lippe resp. ihres Mittellappens, die Form und der Ort der kahlen Stellen.

Die Mehrzahl dieser Merkmale ist geeignet, die beiden Eltern des fraglichen Bastardes auf den ersten Blick von einander zu trennen, so dass die intermediäre Stellung des letzteren ebenfalls mit der grössten Leichtigkeit festzustellen ist. Bei *Ophrys aranifera* sind die drei Sepala grünlich, die beiden seitlichen Petala nahezu von der Länge der Sepala, zungenförmig, am Grunde kaum verbreitert, gelbgrün, kahl. Die länglich-verkehrt-eiförmige Lippe ist in der Regel ungetheilt, mit stark zurückgeschlagenen Seitenrändern, an der meist ausgerandeten Spitze öfter mit einem Spitzchen, aber nicht mit einem deutlichen Anhängsel versehen. Die graubläulichen kahlen Flecke stellen ungefähr ein stark in die Länge gezogenes H dar. *O. fuciflora* hat hingegen blassrosa gefärbte Sepala, sammetartig behaarte, röthliche, dreieckige, am Grunde etwas herzförmige, seitliche Petala, die viel kleiner als die Sepala sind, und eine breit-verkehrt-eiförmige, flache, wenig an den Rändern rück-

wärts gebogene Lippe, welche an der Spitze ein aufwärts gekrümmtes, kahles, vorn dreizahniges Anhängsel trägt. Am Grunde der Lippe befindet sich in der Regel jederseits ein hornähnlicher, gerade vorwärts gerichteter behaarter Höcker; bei *O. aranifera genuina* Rchb. fil. fehlen diese Höcker, die auch bei unseren Bastardformen nicht vorhanden sind, während sie z. B. die ebenso wie die Hauptform verbreitete var. *fucifera* (Sm.) Rchb. fil. besitzt. Die grünlich-gelben kahlen Stellen haben meist die Gestalt eines H, welches mindestens so breit als hoch ist und unter dem sich häufig noch ein kahler Querstreifen oder auch zwei rundliche kahle Flecke befinden, wie sie auch an einer der beiden von Herrn Lauche cultivirten Bastardpflanzen erscheinen.

Bei unserem Bastarde sind die Sepala grünlich-weiss, die seitlichen Petala, welche halb so gross als die Sepala oder etwas grösser und zungenförmig sind, gelblich-grün, besonders am Rande etwas sammetartig papillös, die Lippe ist an den Rändern ziemlich stark zurückgerollt und trägt an der Spitze ein gerade vorwärts gerichtetes, zwar kleines aber deutliches, spitzes Anhängsel. Die kahlen Stellen sind lila, gelblich berandet. Es liegen von diesem Bastarde zwei nur wenig verschiedene Formen vor. Bei der einen, welche eine der *O. aranifera* etwas nähere Form darstellt, sind die seitlichen Petala schmäler, länger und mehr gelblich-grün, die Lippe und ihre kahlen Stellen etwas mehr in die Länge gezogen, während bei der anderen, die sich der *O. fuciflora* etwas mehr nähert, die seitlichen Petala mehr weisslich, breiter und kürzer, die Lippe und die kahlen Stellen mehr in die Breite gezogen sind. Beide Formen sind durch die Bildung der seitlichen Petala auffallend von *O. fuciflora*, durch das Anhängsel an der Spitze der Lippe von allen Formen der *O. aranifera* verschieden. Die Grenier-Philippe'sche Pflanze, von der Vortr. durch die Freundlichkeit des Herrn Dr. Bonnet ein Original-Exemplar aus dem Pariser Museum erhielt, stimmt in allen wesentlichen Merkmalen u. a. „divisions périgoniales intérieures de moitié plus petites [que les extér.], labelle muni en avant dans l'échancrure d'un appendice court, glabre et porrigé", mit den hier abgebildeten Formen überein. Unterschiede sind nur in weniger wichtigen Merkmalen zu finden. Die seitlichen Petala sind etwas breiter und kürzer, und die

nicht ganz fehlende papillöse Bekleidung ihrer Ränder so unscheinbar, dass Grenier sie glabres nennt; ihre Farbe ist vom Autor nicht angegeben, scheint aber nach dem trocknen Exemplar grünlich zu sein. An diesem Exemplar finden sich an der Lippe zwei sehr starke Höcker, doch unterscheidet Grenier 3 Formen; α. *cornuta* mit langen, β. *mammosa* mit kurzen, γ. *explanata* ohne Höcker. Grenier hat für seine Pflanze den Verdacht der Hybridität nicht ausgesprochen, welcher an Ort und Stelle zu prüfen ist. Für die hier abgebildete Pflanze kann Vortr. nach Vergleich mit den angenommenen Stamm-Arten an der Richtigkeit von Herrn Lauche's Annahme hybrider Abstammung nicht zweifeln. Bei der Geringfügigkeit der oben erwähnten Merkmale, welche die französische Pflanze von der von Herrn Lauche cultivirten trennen (bei Bastarden kann ja ohnehin eine völlige Identität zweier an verschiedenen Orten und in verschiedenen Zeiten entstandenen Formen nicht erwartet werden), scheint es dem Vortr. indess vorläufig weniger gewagt, letztere als Form der ersteren unterzuordnen, als sie durch eine eigene Benennung für wesentlich verschieden zu erklären.

Wenn wir schliesslich noch *Ophrys arachnitiformis* nach alter Sitte durch eine lateinische Diagnose charakterisiren wollen, so würde sie, dem Vorbilde der Reichenbach'schen sich anschliessend, etwa folgendermaassen lauten:

Ophrys arachnitiformis Gren. et Phil. *(aranifera × fuciflora).*

Perigonii phyllis lateralibus internis ligulatis elongatis margine parce papilloso-velutinis, labello oblongo-obovato margine revoluto convexo, signis fere aeque latis ac longis, appendice minuta porrecta acuta.

Weiteren Nachforschungen bleibt es vorbehalten, zu ermitteln, ob nicht auch *Ophrys exaltata* Ten. den beschriebenen Bastardformen nahe steht oder gar mit denselben zusammenfällt. Reichenbach fil. (l. c. p. 92) betrachtet die vom Autor (Fl. Nap. II p. 306 tab. 96) beschriebene und abgebildete Pflanze als eine zweifelhafte, der *O. aranifera* sehr nahe stehende Art, hat aber von Gussone unter diesem Namen *Ophrys hiulca* v. Sprun. (sowie schon früher sein Vater von Tenore selbst *O. fuciflora*) erhalten. Grenier (l. c. p. 7) beschreibt als *Ophrys exaltata* Ten. eine Pflanze, deren Blüthen durch ihre Grösse und die weisse, oder selbst blass-rosenrothe Färbung

der Sepala an *O. fuciflora* erinnern, die indess in ihren Merkmalen der *O. aranifera* weit näher steht. Die zwei seitlichen Petala sind „ciliolés et plus ou moins pubescents, d'un brun pâle mêlé d'une teinte légèrement verdâtre"; die Lippe ist in der Ausrundung mit einem kurzen Anhängsel versehen, die kahlen Stellen „très-brunes".

Separat - Abdruck aus der Monatsschrift des Vereins zur Beförderung des Gartenbaues in den königl. preuss. Staaten. (Oktober-Heft 1878.)

Ophrys arachnitiformis Gren. et Phil.

(aranifera × fuciflora).

Von

P. Ascherson.

(Hierzu Tafel VI.)

Am 10. Mai 1877 hatte ich die Freude, die ausgezeichnete Sammlung europäischer Orchideen in voller Blüte zu sehen, welche Herr Inspektor W. Lauche nach der in vorstehendem Aufsatze mitgeteilten Methode und mit dem Erfolge, der seine mit umfassender Sachkenntniss geleiteten und von nie verlöschender Liebe zur Sache getragenen Bestrebungen stets begleitet, in Kultur erhält. Unter den zahlreichen Ophrys-Formen, welche er zum Teil selbst ihren natürlichen Standorten in Thüringen entnommen hatte, machte Herr Lauche mich auf einige aufmerksam, die ihm zu keiner der beschriebenen Arten zu gehören schienen und für die er daher den Verdacht einer hybriden Abstammung von den benachbarten Arten O. muscifera Huds., O. aranifera Huds. und O. fuciflora (Seg.) Rchb. (= arachnites Murr.) aussprach. Die weitere, genauere Ermittelung des Sachverhalts übertrug er mit schon so oft erprobter Freundlichkeit mir, und hatte ich bald die Genugtuung, mich zu überzeugen, dass seine Deutungen vollkommen gegründet waren. Von den mir übergebenen drei Formen erwies sich die eine als ein Bastard von O. muscifera und O. aranifera, der am nächsten der von G. Reichenbach in seiner classischen Iconographie der europäischen Orchideen (Icones florae germ. et helv. Vol. XIII. XIV. pag. 79 tab. 113 I.) beschriebenen und abgebildeten O. hybrida Pokorny zu stehen scheint. Die beiden anderen, einander sehr ähnlichen Formen sind

unzweifelhaft aus einer Kreuzung der O. aranifera mit O. fuciflora hervorgegangen; einen Bastard dieses Ursprungs fand ich in der von mir zu Rate gezogenen Litteratur nicht beschrieben, bis mir ganz vor kurzem durch die Güte der Herren Dr. P. Magnus und Dr. Bonnet eine ebenso seltene als wertvolle kleine Schrift bekannt wurde: Recherches sur quelques Orchidées des environs de Toulon, par M. Ch. Grenier. Extrait des Mémoires de la Société d'Emulation du Doubs 1859. In dieser Abhandlung, in der der verstorbene hochverdiente französische Florist eine Anzahl Orchideen nach lebenden Exemplaren, die ihm der damalige Direktor des „Jardin botanique de la marine impériale à St. Mandrier, près de Toulon-sur-Mer", Mr. Philippe, übersandte, beschrieben hat, findet sich p. 9 eine Ophrys arachnitiformis Gren. et Phil. aufgestellt, welche, wie wir weiter unten sehen werden, dem von Herrn Lauche kultivirten Bastarde so nahe steht, dass einen gleichen Ursprung für dieselbe vorauszusetzen wohl nicht zu gewagt erscheint.

Ausser O. hybrida, welche Pokorny am Bisamberge bei Wien 1846 entdeckte, sind in dem erwähnten Werke von G. Reichenbach noch zwei andere Bastardformen der genannten drei Arten aufgeführt: O. apicula J. C. Schmidt (l. c. p. 79 tab. 102. fig. 6—9), ebenfalls aus der Kreuzung von O. muscifera und O. aranifera entstanden, vom Autor bei Holderbach im Kanton Aargau 1832 aufgefunden, und O. devenensis Rchb. fil. (l. c. p. 87 tab. 102 nebst fig. 1—4), ein von dem gefeierten Monographen der Familie bei Les Devens bei Bex im Kanton Waat 1843 zwischen O. muscifera und O. fuciflora beobachteter Bastard.

Die Gattung Ophrys zeichnet sich vor den übrigen, unter einander sehr nahe verwandten Gattungen der Gruppe, welche ihren Namen führt, noch mehr durch das eigentümliche Aussehen ihrer Blüten aus, als durch das technische Merkmal der zwei getrennten Beutelchen (bursiculae), in welche die Stieldrüsen der Pollenmassen, die sog. retinacula, eingeschlossen sind. Diese Blüten zeigen eine auffallende Aehnlichkeit mit manchen Insekten (in Linné's Sinne), eine Aehnlichkeit, die von altersher auch in der Nomenklatur ihren Ausdruck gefunden hat. Linné sah alle Arten, welche jetzt allgemein (z. B. in Reichenbach's Werke) zu Ophrys gerechnet werden, als Formen

einer Art, O. insectifera, an; seine übrigen Ophrys-Arten gehören grösstenteils nicht einmal zu der heutigen Tribus der Ophrydeen.

Unter den jetzigen Benennungen und Synonymen von Arten und Formen sind die Namen apicula, apifera, arachnites, arachnoides, araneola, aranifera, bombifera, bombyliflora, bremifera, crabonifera, fucifera, fuciflora, muscaria, muscifera, myodes, oestrifera, sphegifera, tabanifera, tenthredinifera, vespifera (die gesperrt gedruckten sind von Reichenbach für Arten angenommen) aus der Entomologie, nur der Name Scolopax einem weniger gerechtfertigten Vergleiche aus der Ornithologie entlehnt. Diese Insekten-Aehnlichkeit, welche selbst dem ungeübten Auge des Anfängers die Zugehörigkeit zu dieser Gattung sofort verrät (höchstens die Serapias-Arten erinnern einigermaassen in ihren Blüten an unsere Gattung, sind aber habituell durch die grossen gefärbten Tragblätter derselben leicht zu unterscheiden), wird namentlich durch die eigentümliche Färbung und sammetartige Behaarung der Lippe (labellum) hervorgebracht, die unverkennbar an den behaarten Hinterleib vieler Insekten, namentlich Hymenoptera, erinnert. Noch tierähnlicher, so zu sagen, erscheinen die in der Regel auf dieser Lippe befindlichen kahlen Stellen, deren oft bläulich-graue Farbe und glänzende Oberfläche an die geschorene Haut langhaariger Tiere, z. B. eines schwarzen Pudels, erinnert. Für die einzelnen Arten sind diese kahlen Stellen (signa, liturae) sehr charakteristisch. Die seitlichen äusseren Perigonblätter (sepala) stellen alsdann die Flügel, und die seitlichen inneren (petala) die Fühlhörner des Insekts dar.

Die Linné'sche Ansicht über den spezifischen Wert der Ophrys-Formen kann als ein vollgültiges Zeugnis für ihre nahe Verwandtschaft, also für die Natürlichkeit der heutigen Gattungsbegrenzung gelten; sie erinnert an die ähnlichen Anschauungen des grossen schwedischen Naturforschers über die Medicago-Formen. Indess bei Ophrys wie bei Medicago hat man eine Anzahl wichtiger und zum Teil auch leicht aufzufindender Merkmale in Betracht gezogen, durch welche sich das anscheinende Chaos der Formen sicher und ohne allzu grosse Schwierigkeiten in eine Anzahl scharf geschiedener Arten gliedern lässt. Als solche gelten bei Reichenbach hauptsächlich die Form und Bekleidung der Petala, die bei manchen Arten kahl, bei anderen sammetartig behaart sind; die Form der

Lippe (bei manchen ungeteilt, bei anderen dreilappig), die Richtung ihrer Ränder, das Vorhandensein oder Fehlen resp. die Richtung eines kahlen Anhängsels an der Spitze der Lippe resp. ihres Mittellappens, die Form und der Ort der kahlen Stellen.

Die Mehrzahl dieser Merkmale ist geeignet, die beiden Eltern des fraglichen Bastardes auf den ersten Blick von einander zu trennen, so dass die intermediäre Stellung des letzteren ebenfalls mit der grössten Leichtigkeit festzustellen ist. Bei Ophrys aranifera (Fig 3.) sind die drei Sepala grünlich, die beiden seitlichen Petala nahezu von der Länge der Sepala, zungenförmig, am Grunde kaum verbreitert, gelbgrün, kahl. Die länglich-verkehrt-eiförmige Lippe ist in der Regel ungeteilt, mit stark zurückgeschlagenen Seitenrändern, an der meist ausgerandeten Spitze öfter mit einem Spitzchen, aber nicht mit einem deutlichen Anhängsel versehen. Die kahlen Stellen stellen ungefähr ein stark in die Länge gezogenes H dar. O. fuciflora (Fig. 4.) hat hingegen blassrosa gefärbte Sepala, sammetartig behaarte, rötliche, dreieckige, am Grunde etwas herzförmige, seitliche Petala, die viel kleiner als die Sepala sind, und eine breit-verkehrteiförmige, flache, wenig an den Rändern rückwärts gebogene Lippe, welche an der Spitze ein aufwärts gekrümmtes, kahles, vorn dreizahniges Anhängsel trägt. Am Grunde der Lippe befindet sich in der Regel jederseits ein hornähnlicher, gerade vorwärts gerichteter behaarter Höcker; bei O. aranifera genuina Rchb. fil. fehlen diese Höcker, die auch bei unseren Bastardformen nicht vorhanden sind, während sie z. B. die ebenso wie die Hauptform verbreitete var. fucifera (Sm.) Rchb. fil., deren Abbildung wir hier entlehnt haben, besitzt. Die kahlen Stellen haben die Gestalt eines H, welches mindestens so breit als hoch ist und unter dem sich häufig noch ein kahler Querstreifen befindet.

Bei unserem Bastarde sind die Sepala grünlich-weiss, die seitlichen Petala, welche halb so gross als die Sepala oder etwas grösser und zungenförmig sind, gelblich-grün, besonders am Rande etwas sammetartig papillös, die Lippe ist an den Rändern ziemlich stark zurückgerollt und trägt an der Spitze ein gerade vorwärts gerichtetes, zwar kleines aber deutliches, spitzes Anhängsel. Es liegen von diesem Bastarde zwei nur wenig verschiedene Formen vor, deren Blüten in den von Herrn F. Kurtz mit gewohnter Sorgfalt nach der lebenden Pflanze

entworfenen Figuren 1 u. 2 abgebildet sind. Bei der einen (Fig. 1), welche eine der O. aranifera etwas nähere Form darstellt, der auch das von Herrn W. Lauche's Meisterhand in natürlicher Grösse abgebildete Exemplar angehört, sind die seitlichen Petala schmäler, länger und mehr gelblich-grün, die Lippe und ihre kahlen Stellen etwas mehr in die Länge gezogen, während bei der auf Fig. 2 dargestellten Pflanze, die sich der O. fuciflora etwas mehr nähert, die seitlichen Petala mehr weisslich, breiter und kürzer, die Lippe und die kahlen Stellen mehr in die Breite gezogen sind. Beide Formen sind durch die Bildung der seitlichen Petala auffallend von O. fuciflora, durch das Anhängsel an der Spitze der Lippe von allen Formen der O. aranifera verschieden. Die Grenier-Philippe'sche Pflanze, von der ich durch die Freundlichkeit des Herrn Dr. Bonnet ein Original-Exemplar aus dem Pariser Museum erhielt, stimmt in allen wesentlichen Merkmalen u. a. „divisions périgoniales intérieures de moitié plus petites [que les extér.], labelle muni en avant dans l'échancrure d'un appendice court, glabre et porrigé", mit den hier abgebildeten Formen überein. Unterschiede sind nur in weniger wichtigen Merkmalen zu finden. Die seitlichen Petala sind etwas breiter und kürzer, und die nicht ganz fehlende papillöse Bekleidung ihrer Ränder so unscheinbar, dass Grenier sie glabres nennt; ihre Farbe ist vom Autor nicht angegeben, scheint aber nach dem trocknen Exemplar grünlich zu sein. An diesem Exemplar finden sich an der Lippe zwei sehr starke Höcker, doch unterscheidet Grenier 3 Formen: α. cornuta mit langen, β. mammosa mit kurzen, γ. explanata ohne Höcker. Grenier und Philippe haben für ihre Pflanze den Verdacht der Hybridität nicht ausgesprochen, welchen an Ort und Stelle zu prüfen ist. Für die hier abgebildete Pflanze kann ich nach Vergleich mit den angenommenen Stamm-Arten an der Richtigkeit von Herrn Lauche's Annahme hybrider Abstammung nicht zweifeln. Bei der Geringfügigkeit der oben erwähnten Merkmale, welche die französische Pflanze von der von Herrn Lauche kultivirten trennen (bei Bastarden kann ja ohnehin eine völlige Identität zweier an verschiedenen Orten und zu zwei verschiedenen Zeiten entstandenen Formen nicht erwartet werden), hielt ich es vorläufig für weniger gewagt, letztere als Form der ersteren unterzuordnen, als sie durch eine eigene Benennung für wesentlich verschieden zu erklären.

Wenn wir schliesslich noch Ophrys arachnitiformis nach alter Sitte durch eine lateinische Diagnose charakterisiren wollen, so würde sie, dem Vorbilde der Reichenbach'schen sich anschliessend, etwa folgendermaassen lauten:

Ophrys arachnitiformis Gren. et Phil. (aranifera × fuciflora).

Perigonii phyllis lateralibus internis ligulatis elongatis margine parce papilloso-velutinis, labello oblongo-obovato, margine revoluto convexo, signis fere aeque latis ac longis, appendice minuta porrecta acuta.

Erklärung der Tafel VI.

Ophrys arachnitiformis Gren. et Phil.

Die Pflanze in natürlicher Grösse, nach einer Aquarelle von W. Lauche.

Fig. 1a. Blüte einer der O. aranifera etwas näher stehenden Form, von vorn. 1b. Lippe derselben, von der Seite gesehen.

Fig. 2a. Blüte einer der O. fuciflora etwas näher stehenden Form, von vorn. 2b. Lippe derselben, von der Seite gesehen.

Fig. 1 und 2. fast $\frac{2}{1}$ der natürlichen Grösse, nach Farbenskizzen von F. Kurtz.

Ophrys aranifera Huds. var. fucifera (Sm.) Rchb. fil.

Fig. 3. Blüte von vorn, nat. Gr. (nach Reichenbach Icon. XIII. XIV. tab. 97. IV.).

Ophrys fuciflora (Seg.) Rchb.

Fig. 4. Blüte von vorn, nat. Gr. (nach Reichenbach l. c. tab. 109 I.).

Lauche et Kurtz del W. A. Meyn lith.

Ophrys arachnitiformis Gren. et Phil.
(aranifera × fuciflora)

Ad. Aug. 1197.

Ophrys aranifera. Huds.
var. limbata.

Bot. Reg. 32. t. 52.

Cyrtopodium cornutum. Ker.
Corfu.

Bot. Reg 33. t. 25.

Ophrys fuciflora. Hall.

A. Spike of flowers
B. Flower [illegible] Sepals dark brown
C. Lip

Turpin pinx. et direx. *Plée sculp.*

OPHRISE apifère.

OPHRYS apifera.

1 *Etamines et pistil grossis.* 2 *Masse de pollen.* 3 *Fruit de grosseur naturelle.* 4 *le même coupé horisontalement.*

11

304

1533. Stenoglossis. Lindl.

M. S. del, J.N. Fitch lith

Vincent Brooks, Day & Son imp.

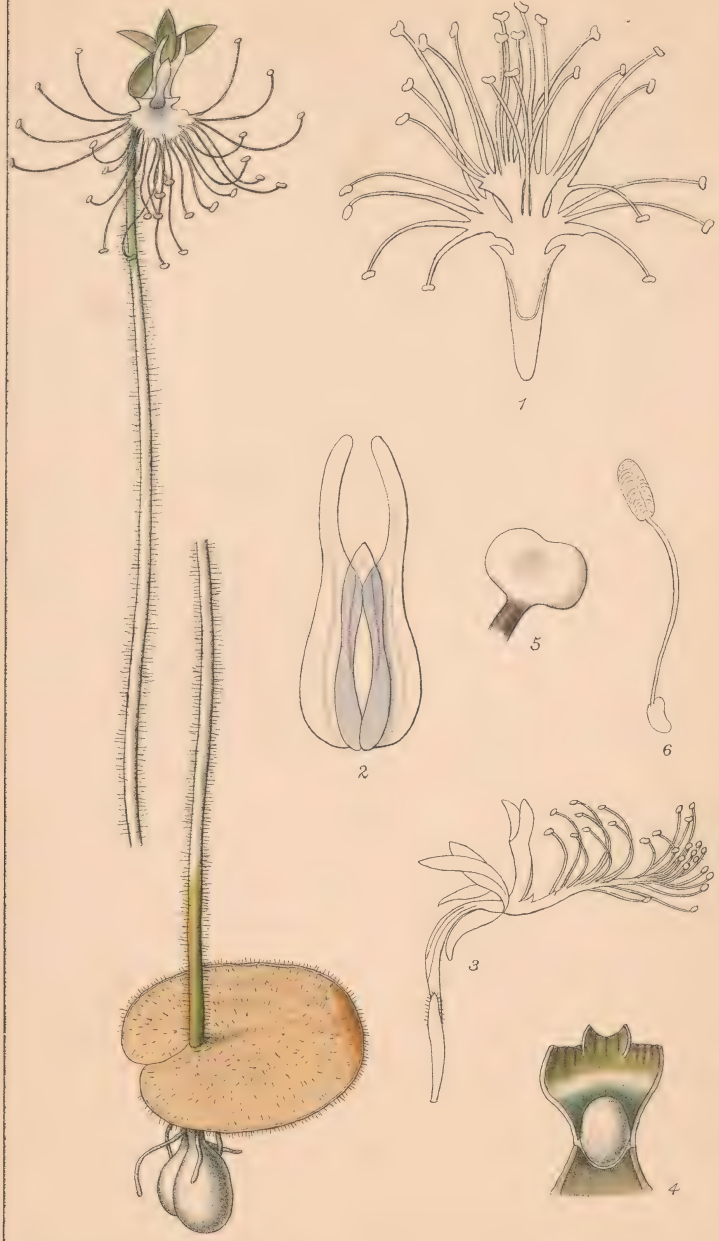
J. Reeve & Co. London.

Stenoglottis longifolia

21

306

Bardolina



H.Bolus. del. 30. 11. 83.

Hanhart imp.

BARTHOLINA ETHELÆ. *BOLUS.*

J. Sowerby del. et lith.

Vincent Brooks, Day & Son Imp.

L. Reeve & Co. London.

Barbatina parviceps R. Br.

307

Kultanaea · Kent.

Flora 1867.

Reichenbach Novitiae quaedam Africanae p. 115 & ff.

Ad 1 & 2 Huttonaea Nees f.

Sepala dorsale & sepala unguiculata apice cucullata basi in unguem coñata. Sp. lateralia majora libera. Lab. flabellatum crenulatum liberum. Antherae loculi primum subparalleli dein divergentes. Glandulae nudae. Stigmatis fovea plana non limbata postelli limbo omnino depresso.

Reichenbach fügt dann aus. dass die Divergenz der Antherenfächer bei Huttonaea (& Hallerixia) lediglich vom Alter der Blüthen abhange.

1. Huttonaea pulchra Harv. Ker. cap. II, 1 t. 101. Caule erecto 2phyllo foliis supra vaginā petiolatis cordato-ovatis acutis racemo pluriflora, bracteis triangulis acutis ovaria non aequantibus, sepallo summo cuneato ovato obtuse acuto, sepal. unguiculatis apice saccato crenulatis, petal. margine externo ciliato-laceris, labell. cuneato ovato lacero-fimbriato

für habe „pulcre' anders als Harvey
Er zeichnet freie Nägel der Sepala & um-
giebt den ganzen Saum der Kappe mit der
Sepala mit Fransen, endlich etwas seit-
dieser Kappe eine runde eingefaßte
Öffnung. Ich sehe die Nägel der Sepala
völlig verwachsen mit dem Nagel der
unpaaren Sepalum; ferner die Kappe
der Sepala ganz aufgerissen ohne
umgefaßten Saum & nur am
Mundrand gefranzt. Wer das Bild Harveys
gesehen hat, ohne Originale aus seiner
Hand zu vergleichen, würde selbstver-
ständlich eine neue Art aufstellen.

2. Huttonaea fimbriata Kirk. f.
Caule erecto diphyllo, foliis cordato-
oblongis acutis versilibus, racemo
pluriflor, bracteis triangulis acutis
ovaria non aequantibus attingentibus,
sepalo supremo cuneato ovato acuto
limbo minute denticulato, sepalis

unguiculatis galeatis bivis, limbo externo ciliatis, sepalis connato rhombeo ovatis obtuse acutis inaequaliter obscure denticulatis, labello connato ovato obtuso antice ciliato fimbriato.

Auch hier war ich in der unangenehmen Lage, Harvey's Darstellung Thesaur. II 102 absent zu finden. Die Sepala sehe ich wiederum ganz anders.

308

1530. Trypsin. E. P.

Codex

1

2

7

4

6

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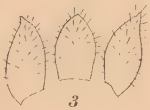
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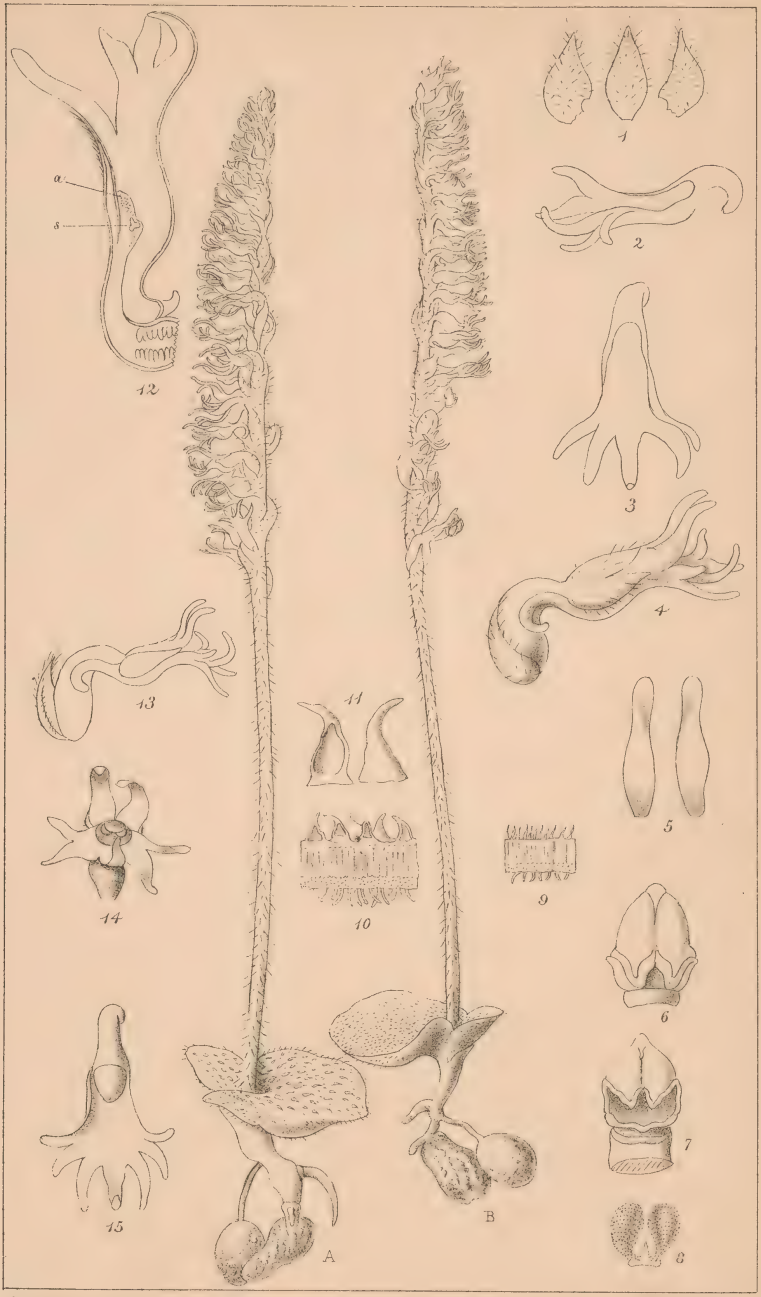
9

H.Bolus, del. ex vivo. 2.1.1887. Hanhart imp.

HOLOTHRIX PARVIFOLIA, *LINDLEY*.



Bolus del. ex vivo. 26 x 85.

HOLOTHRIX SQUAMULOSA, *LINDLEY*.

M.S. del. J.N. Fitch lith.

Vincent Brooks Day & Son Imp.

L. Reeve & Co. London.

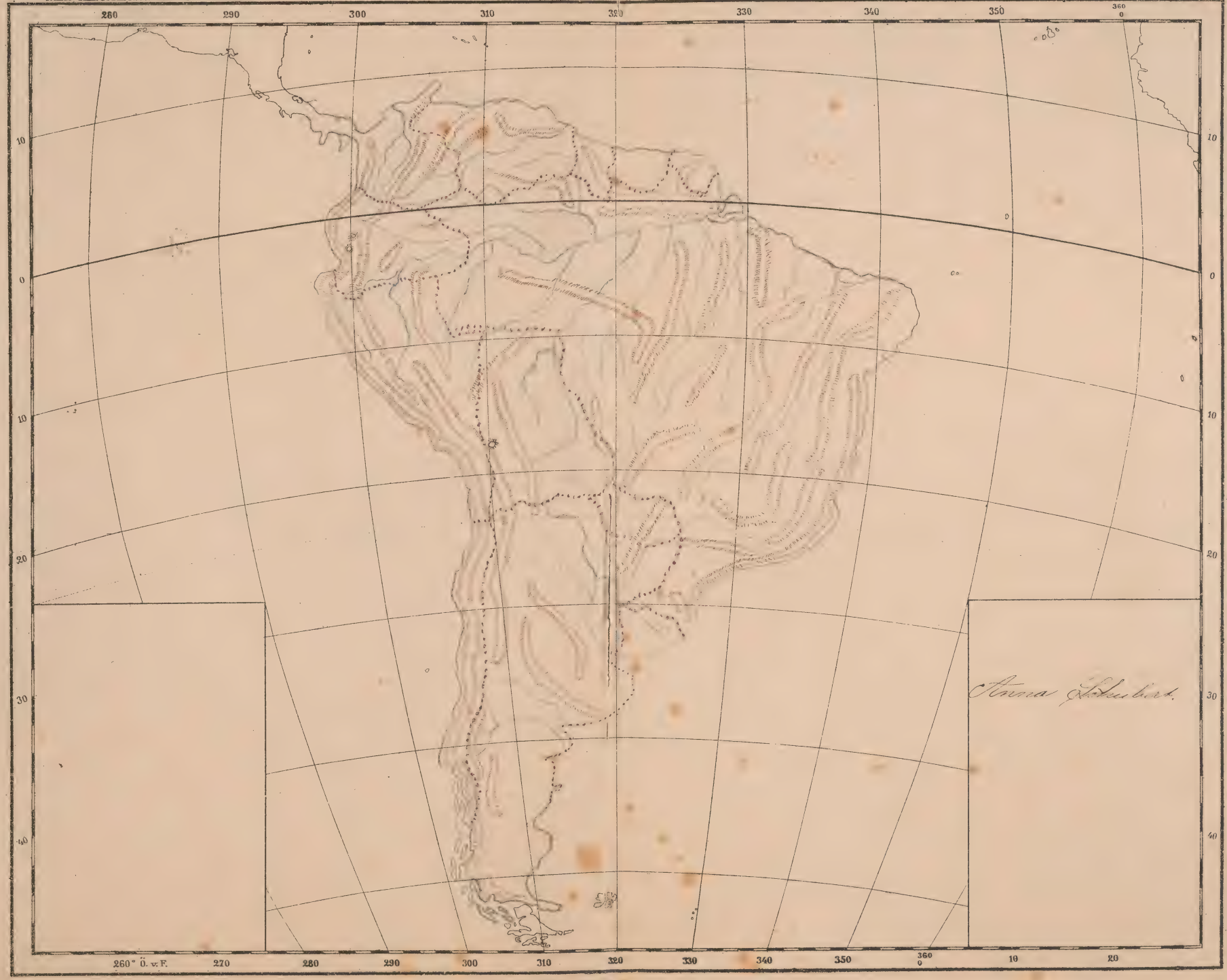
Holothrix orthoceras

4

3106

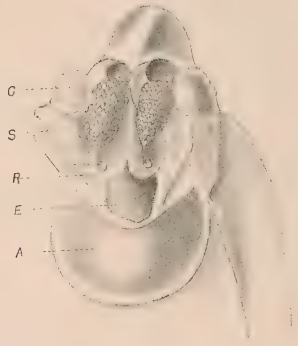
1517 Peristylus. Blume

SÜD - AMERICA.



JUL. STRAUBE. BERLIN.

1



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Drawn by R. Pantling.

Lith. by P. N. Sinha

HABENARIA PRAINII, Hook. fil.

A Rich. Tent. fl. Abyss. II 287. Tab. 87

Peripylus Quartinianus.

Caule erecto; fol. (vaep. ?) jejunis decorrentib. obl. ellipti. acut. sub 7-nerv. spica elongata densa brevi. ovalib. acut. florum longitudine. Sep. supremo elongato. lateralib. subobliq. internis obovatis obtusiuscul. Lab. 2partit. laciniis lateralib. lin. oblongis intermedio longiore subspathulato. caliare brevi incurvo obtuso.

In montosis herbosis pr. Adouah — Augusti

Aff. P. latifolio Lol de St Maurice. differe par son labelle à 3 nerv. profondes linéaires inégales. tandis que dans l. P. latif. ces 3 nerv. sont très courtes arrondies & obtuses.

A. Richard Fens. fl. Abyss. II 288

Periptylus Pelidianus A. Rich. Ab ve-
rad. 2 ex. XIV. 266. Harp. pl Schimp
sect. II n 1257.

Caule erecto 1', fol. 5-6 basi vaginantib.
ovali- acut. basi subcordat, flor. viridib.
racemum elongat. efformantib. bract.
ovali- lanc. acuminat. ovario longiorib.
sep. pet. q. subaequalib. ovatib. obtusiusc.
Lab. subcarnosis sepal. longior basi bre-
vissime calcarato, 3fido laciniis media
breviori semiovali acuta. calcaribus
longiorib. angustis oblongis.

In montos. circ Adoua, Alba- Gariima
in prov. Chodgerade & in media regione
descendens ab Enlibedcab versus
Choaka. mense Augusto.

Scarlet Lychnis serrated Petal & Moss

Atlas 2 Ed. est. XIII. tab 16 fig 3

Pericleus Lafebvrianus H. Rich.

Periscyclus Pelicianus. A. R.
Richard. Pentam. fl. Abyss. T. 84.

33

310 Platanthera L. C. Rich.

9.

Dr Kränzlein
Lindenpeere
Promenaden Nr 9.

Epipactis rubiginosa Roiy
Mex. n. Ins. Bionds.

Epimedium Pseudo-
Diphylax Kiangsi.

Hook. Fl. Bor. Amer. II. t. 199.

Platanthera ciliaris

Hook. Fl. Bor. Amer. II t. 201.

Platanthera
orbiculata

Hooker Fl. Bor. Am. II t. 200.
Platanthera orbiculata

Platanthera
Purpurea

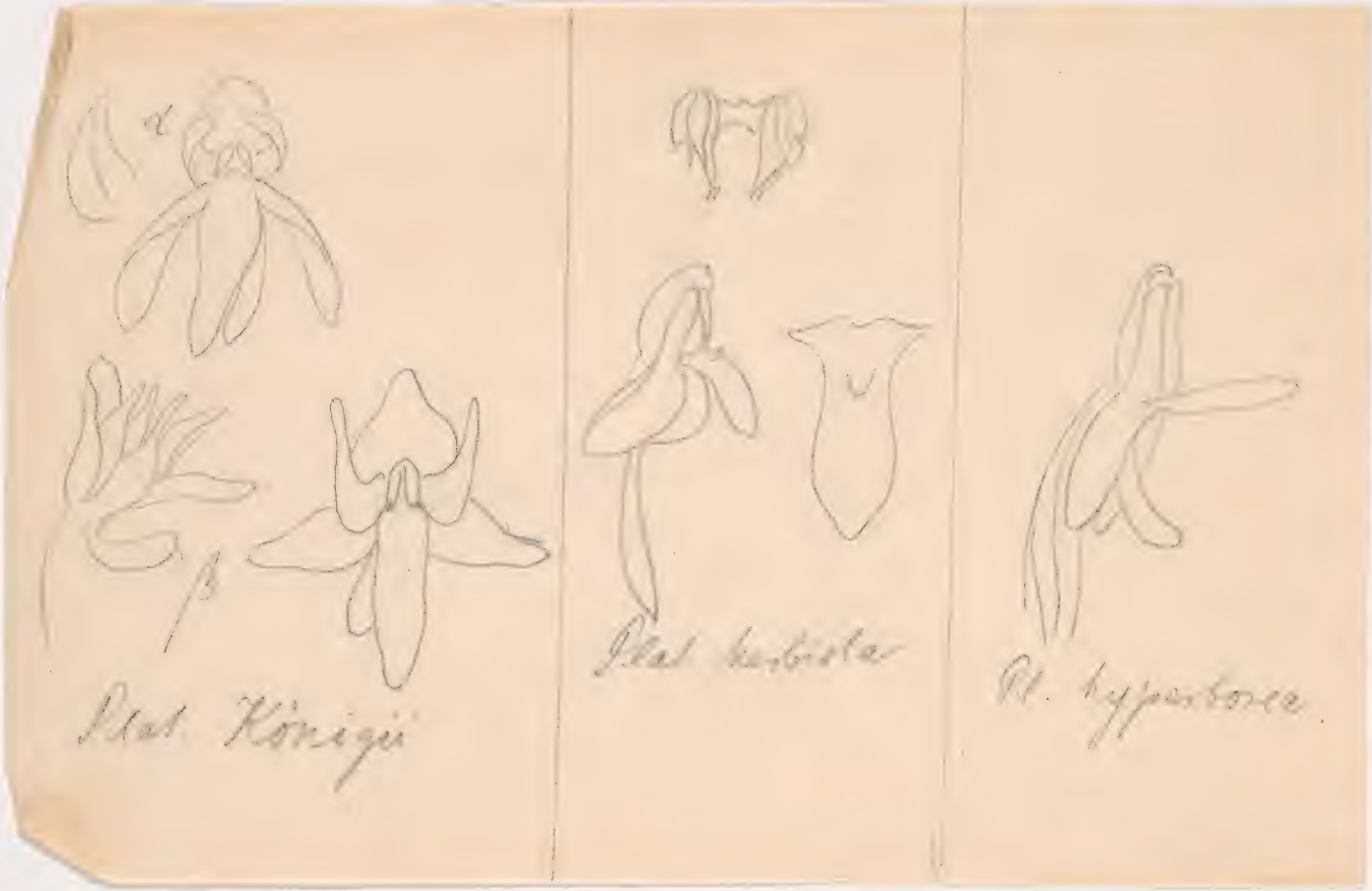
Pled Lineae

Galeath
Aristata

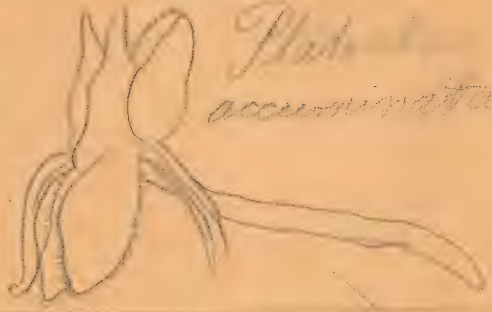
Pled-gratiola

Epimedium flavum

Epimedium pubescens f. flavum


α
β
Pleat. Königii
Pleat. barbata
Pl. hyperborea.

Platanthera obtusata



Platanthera
accuminata

Platanthera (Blephariglottis)

Ptolandi Blumei
(Meissa)

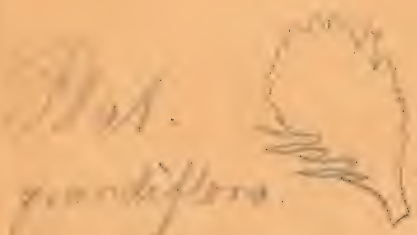
Ic. pl. t. 1865.
Dipodium maculatum Lindl.

Annals of Bot. Vol. II p. 18.

Habenaria-Orchis viridi-marginata

Linnean Society 1890
(XXV) t. 30

Scyphyla
(Warscewiczia) coccinea Klotzsch



Hyb. secundiflora

Nutt.

Platanthera
fimbriata

Platanthera
[illegible]
Pl. psycodes
A. Gray.

del. Horn.

Scelylax (Halcyonini?) Griffithii Horn f.

H. gracilis

Hab. inter alia
Kairt. Agra
H. graveolens
Kranzlin

B. cowaniana

B. labiata

B. Lawrenceana

Pl. Champ.

Platanthera Incisa

Oncidium bifolium

HABENARIA *R. Br. (ex parte).*

(Gymnadeniae species Rich. Himantoglossi Reich.)

Habenaria, Zügelorchis.

Syst. nat. Class. Monocotyledoneae, Fam. Orchideae, Trib. Ophrysinae.
Syst. Lin. Class. XX. Ord. I. *Gynandria Monandria.*
Bartl. Ord. pl. p. 56. *Kunth.* Handb. p. 287.
Lindl. Einl. p. 384.

CHAR. GEN.

Flores sessiles, in spicam laxam bracteatam dispositi.

Perianthii laciniae exteriores cum duabus interioribus (multo angustioribus) fornicato-conniventes; labellum elongatum, pendulum, trifidum, basi in calcar breve productum, praefloratione erectum et apice inflexum. Gynostemium breve ut in Orchide. Antherae loculi connectivum aequantes, discreti et distantes, basi aperti, (*non bursiculati*). Processus rostellaris inter antherae loculos nullus. Pollinaria caudiculata et retinaculifera, retinaculis basilaribus disciformibus exsertis (*semper nudis*). Pollen sectile ut in affinibus. Staminodia parva, obtusa. Stigma in cavitate infra antheram situm, maculam ovatam sistens. Germen contortum et fructus ut in Orchide.

Ex Orchideis indigenis huc pertinet unica (*Satyrium viride* L.); e speciebus generis Habenariae exoticis, *Hab. bracteatam* R. Br. et reliquas huic speciei affines species ad genus nostrum referendas esse, non dubito.

Lin. Gen. pl. ed. Spr. n. 3283.
Rob. Br. Verm. Schr. II. p. 9.

Adn. Genus hoc modo circumscriptum *Platantherae* proxime accedit, a quo perianthii et labelli forma, retinaculis terminalibus et habitu alieno distinguitur. A *Gymnadenia* retinaculis exsertis nudisque et loculis antherae distantibus recedit; a *Loroglosso* longius distat.

EXPLICATIO FIGURARUM.

1. Flores *Habenariae viridis*, magn. nat.
2. Flos, a latere visus.
3. Idem, magn. auctus.
4. Idem, a fronte del. magn. nat.
5. Idem, magn. auctus.
6. Gynostemium, a fronte visum, magn. auctum, r. retinaculum.
7. Idem, a latere visum.
8. Pollinarium.
9. Sectio transversalis germinis.
10. Capsula, magn. nat.
11. Semen, magn. nat.
12. Radix.

HABENARIA nob.

GYMNADENIA *Rich.* (*ex parte*).

*Gymnadenie**)

Syst. nat. Class. Monocotyledoneae, Fam. Orchideae, Trib. Ophrysinae.
Syst. Lin. Class. XX. Ord. I. *Gynandria Monandria.*
Bartl. Ord. pl. p. 56. *Kunth.* Handb. p. 287.
Lindl. Einl. p. 384.

CHAR. GEN.

Flores sessiles, spicati.

Perianthium coloratum ut in Orchide constructum. Laciniae exteriores lateralesque patentes, vel cum superiori et duabus interioribus fornicato-conniventes; labellum trifidum, patens, basi plus minus calcaratum.

Gynostemium breve Orchidis. Anthera antica, continua, erecta, obtusa, *basi a rostello marginata, bursicula autem destituta, bilocularis, loculis inferne cucullatis demum totis apertis.* Processus rostellaris loculis interjectus, ut in Orchide. Pollinaria duo, clavata, caudiculata. Retinacula duo, lateralia (vel basilaria). Staminodia ad latera antherae duo, satis conspicua.

Stigma maculam transversam lunatam infra antheram sistens. Germen contortum.

Fructus et semina ut in omnibus Ophrysinis.

Plantae herbaceae, terrestres, radicibus bituberatis instructae. Huc referendae sunt species huius generis a cl. Reichenbach l. c. descriptae

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*) Nomen (Nacktdrüse) incongruum, cum non in hoc genere, sed in *Platanthera* et affinibus retinacula nuda reperiantur.

nec non *G. albida* Rich. — *Gymnadenia viridis vero ad Habenariam nostram* pertinet.

Lin. Gen. pl. ed. Spr. n. 3284.
Rich. Orchid. Europ. l. c. p. 48.

Adn. *Gymnadenia* a genere Orchidis bursiculae defectu recedit; in *G. conopsea* retinacula lateralia, in *G. albida* contra basilaria, ut in plurimis Orchideis, reperiuntur. Perianthium galeatum, quo species ista a *G.* conopsea recedit, minoris est momenti, quia et inter Orchidis species aliae perianthio patenti et aliae perianthio galeato instructae occurrunt. Ceterum genera *Loroglossum*, *Anacamptis* et *Gymnadenia* Orchidis generis sectiones potius (aut subgenera) reputanda esse, quam genera propria, vix dubito.

EXPLICATIO FIGURARUM.

1. *Gymnadenia conopsea* Rich. magn. nat.
2. Alabastrum.
3. Sectio eius transversalis.
4. Flos, a fronte visus, magn. auctus.
5. Gynostemium, a fronte. —
6. Idem, a latere del.
7. Pollinarium cum retinaculo laterali.
8. Idem, magn. magis auctum.
9. Capsula matura, magn. nat.
10. Sectio transvesalis, magn. aucta.
11. Semen.
12. Radix et pars inferior caulis.
13. *Gymnadenia albida* Rich. magn. nat.
14. Flos, a latere visus, magn. auctus.
15. Idem, sublata lacinia, ut labelli forma conspiciatur.
16. Gynostemium cum labello.
17. Gynostemium, magis auctum.
18. Pollinarium.
19. Segmentum transversale germinis.
20. Radix bituberata, tuberibus angustis fusiformibus.

Fam. Orchideae.

Trib. Ophrysinae

GYMNADENIA Rich.

PLATANTHERA *Rich.*

(*Orchidis species Lin.*)

Platanthere.

Syst. nat. Class. Monocotyledoneae, Fam. Orchideae, Trib. Ophrysinae.
Syst. Lin. Class. XX. Ord. I. *Gynandria Monandria.*
Bartl. Ord. pl. p. 56. *Kunth.* Handb. p. 287.
Lindl. Einl. p. 384.

CHAR. GEN.

Flores sessiles, in spicam laxam dispositi. Perianthii lacinia suprema cum duabus interioribus fornicato-connivens, foliolis lateralibus demum patentibus; labellum indivisum, elongatum, basi calcaratum.

Gynostemium breve, erectum, nulla parte stylina praeter stigma visibili. Anthera antica, erecta, bilocularis, loculis distantibus basi apertis, (*non bursiculatis*). Processus rostellaris inter antherae loculos nullus.

Pollinaria caudiculata ut in Orchide; retinacula disciformia exserta, (semper nuda), caudiculorum basi latere affixa. Bursicula nulla. Staminodia rotundata, papillosa. Stigma cavitati profundae labelli et gynostemii marginibus immersum, prope calcaris orificium maculam ovatam lucidam sistens. Germen oblongum, contortum.

Fructus et semina ut in Orchide.

Plantae herbaceae. Flores albi vel virescentes. Radix bituberata. (Huc pertinet *Orchis bifolia L.* et species duae quam maxime affines, a cl. Reichenbach nuperrime distinctae).

Rich. Orch. Europ. l. c. p. 48.
Lin. Gen. pl. ed. Spr. n. 3285.
Reich. Fl. germ. exc. p. 120.

EXPLICATIO FIGURARUM.

1. Flores *Platantherae bifoliae R.* magn. nat.
2. Flos, a latere visus.
3. Idem, a fronte visus.
4. Idem, a latere visus, sublato perianthio externo.
5. Gynostemium cum staminodiis et stigmate, magn. auctum.
6. Idem, a latere visum.
7. Idem, demto staminodio, ut retinaculum conspiciatur.
8. Segmentum transversale gynostemii.
9. Pollinarium.
10. Segmentum transversale germinis.
11. Capsulae maturae, magn. nat.
12. Segmentum capsulae transversale, magn. auctum.
13. Semen.
14. Radix.

PLATANTHERA Rich.

CHAMAEREPES *Spr.*

Erdorchis.

(*Chamorchis Rich. Ophrys Linn*)

Syst. nat. Class. Monocotyledoneae Fam. Orchideae Trib. Ophrysinae.
Syst. Lin. Class. XX. Ord. I. Gynandria Monandria.
Bartl. Ord. pl. p. 56. *Kunth* Handb. p. 287. *Lindl.* Einl. p. 384.

CHAR. GEN.

Flores sessiles, spicati et bracteati. Perianthii laciniae in formam *galeae nutantis* conniventes; duae interiores exterioribus subaequales; labellum pendulum, obsolete-trilobum, basi muticum (non calcaratum), praefloratione erectum. Gynostemium breve. Anthera adnata, erecta, obtusa, bilocularis, loculis discretis. Pollinaria duo, caudiculata; retinacula *bursiculis duabus* inclusa. Pollen sectile ut in omnibus Ophrysinis. Processus rostellaris inter antherae loculos nullus. Staminodia parva. Stigma cordatum. Germen oblongum, post anthesin contortum.

Fructus: Capsula costata, unilocularis, polysperma et semina ut in omnibus generibus antecedentibus constructa.

Plantae herbaceae, parvae, Alpium altiorum incolae; radices bituberatae.

Lin. Gen. pl. ed. Spr. n. 3308.
Rich. Orch. Eur. l. c. p. 49.
Reich. Flor. Germ. exc. p. 127.

Adn. Huc pertinet unica species europaea *Ch. alpina* Spr. (Ophrys Lin.). Specimina in spiritu vini servata miserunt cl. *de Spitzel.* et *amic. Lehmann.* — A genere *Ophrys*, cui proxima, perianthii laciniis subaequalibus et conniventibus, nec non labelli forma et germine contorto recedit. Bursiculas contra et totius gynostemii structuram ut in Ophryde observavimus.

EXPLICATIO FIGURARUM.

1. *Chamaerepes alpina* Spr. magn. nat.
2. Alabastrum, magn. auctum.
3. Flos, a latere.
4. Idem, a fronte visus.
5. Gynostemium cum labello, a fronte.
6. Idem, a latere visum.
7. Pollinarium cum retinaculo et bursicula.
8. Fructus immaturus, magn. nat.
9. Sectio eius transversalis.

CHAMAEREPES Spr.

HERMINIUM *Lin. R. Br. Rich.*

(*Ophrys monorchis Lin. et Aut.*)

Herminium.

Syst. nat. Class. Monocotyledoneae Fam. Orchideae Trib. Ophrysinae.
Syst. Lin. Class. XX. Ord. I *Gynandria Monandria.*
Bartl. Ord. pl. p. 56. *Kunth.* Handb. p. 287.
Lindl. Einl. p. 584.

CHAR. GEN.

Flores sessiles, in spicam densam bracteatam collecti, parvi, albidi.

Perianthii laciniae omnes in florem subcampanulatum conniventes; laciniae interiores longiores et angustiores, medio dentatae; labellum basi saccatum, hastato-trifidum.

Gynostemium breve, ut in Orchide. Antherae loculi connectivo rotundato breviores, ad basin usque discreti (non bursiculati). Processus rostellaris inter antherae loculos nullus. Pollinaria *brevissime caudiculata; retinacula maxima, cucullato-concava, nuda et exserta* (ut in Platanthera et Habenaria). Pollinis massulae dense confertae. Staminodia sat magna, rotundata. Stigma maculam subrotundam infra antheram sistens. Germen oblongum, contortum, apice reclinatum. Fructus et semina ut in affinibus.

Species unica in Germaniae pascuis montanis obvia, e minoribus huius ordinis. Radix bituberata, tubere altero juniori remoto.

Lin. Gen. pl. ed. Spr. n 5293.
Rob. Br. Verm. Schr. II. p. 8.
Rich. Orch. eur. l. c. p. 49.

Adn. *Herminium* a generibus duobus antecedentibus, quibuscum retinaculis nudis convenit, insolita horum organorum magnitudine et forma satis differt.

EXPLICATIO FIGURARUM.

1. *Herminium Monorchis* R. magn. nat.
2. Flos integer, magn. auctus.
3. Perianthium cum parte germinis a facie inferiori visum.
4. Lacinia perianthii interior.
5. Labellum, magn. nat.
6. Idem, a dorso delin., magn. nat.
7. Gynostemium, a fronte visum.
8. Pollinarium cum retinaculo.
9. Idem, magn. magis auctum.
10. Segmentum transversale germinis.
11. Capsula matura, magn. nat.
12. Eadem, magn. aucta.
13. Segmentum transversale.
14. Semen.

HERMINIUM RBr.

106(124)

3101

1525. Habenaria. Willd.

Habenaria obtusicornis.
Lindl.

Mab. Alexandrea Rhea

Haben. armifera. Natt.

M. anomala. Linn.

Matricaria

Mab. Secretest. Lind.

Habenaria bractyceras
Lindl
Lec Lot Herb. regia V.
H. bracyca
= H. alata Hook. exH. fl.
t. 169.

M. bracteosa Lk

H. Wood. Del.

Eccum. St. Franc. 645.

Maleneria rotundifolia

Habenaria Dawsoniana Wallis.

Stelis ruiziana (rosea)

Helcia parviflora Lindl.
Peru

Mak Niffera Rich
Fl. Mexico
Mirador Sierra Cordillera
Vera Cruz 1870

Mrs. Higinbotham
Mrs. Briggs Lindley

Mab. Bègeana

Mch. elongata. N. Br.

H. flava Klotzsch
Bonatea flavescens
Lindl.

Mrs. Helen A. Rice

Hel. gracilis Lind.

Neb. Hexapetala. Lind.

Neb. Hookeri n. sp.
near Lindsayi Ess. & Seiffe.

Hab. late folia. Linn.

Hab. Leon ou is. Krämlin
(Copie aus Lindleys Herb.
wo d. Pfl. unter d. Namen Hab
pandida liegt.)

Melocactus Lepidosiphus
Trinidad, Pardo

M. lurida.

M. leptoceras

Hook

M. longicornis.

Yours faithfully
Jenny Lind

H. meridana

Heb. macrolaiga

Den Spare ist in wichtigen Skelettteilen
Respekt wohlungefähr
M. nach Leben Lebt.

Mal. mesa

Mira orchid! In late Sep Sepals
völlig anders gefärbt. X die part. auch wie
die Petalen gewimpert, niemals aufge-
richtet wie die hier dargestellt sind

Mah. Sinclair R.B.

Habenaria parviflora Ld.
Nach Lindl. Skizze im Kgl. Kew.
copiert. Aug. 89.

Cirrhaea
fasciculata

H. pumila. Lindl.

H. porcella

Cat. pseudo

Habenaria pramensis. Lind.

Meh. Roberts
LH

Habenaria
pyramidalis

Mabeuania quadrata.
Lindl.

Habenaria repens. Nutt.

Mel rhynchotyle Lindl.

Lippe ca. long.

Habenaria rostrata

Zeichnung der Laint.

Habitat tropical. Kew Aug. 1871

(Platanthera Rumphii Lindl.)

Habenaria Rumphii

Lindl.

Sur Linné Hab. spicat.

Mak. Sternbergii

H. reunata

H. rubrica

Neb. reticulata Ldl. Jeff.

Hab. reliqua. Louis

H. spathulifolia

Habenaria dentata. Lindl.

Hylocichla
Lawr

A. Anisosalpa

Kate Hardy Likes

Meb. branicke Ldl.

Hor. laciflora

M. spathacea
Rod del

Annales d. Sc. nat. XVI. pl. 16. 2.

Peristylus Quartinianus
A. Rich.
Habenaria Quartiniana Rich.

Peristylus Quartinianus
A. Rich.
Teutam. fl. Abyss. T. 85.

Bot. Mag. 3397

Habenaria goodyeroides. Don.
Bombay.

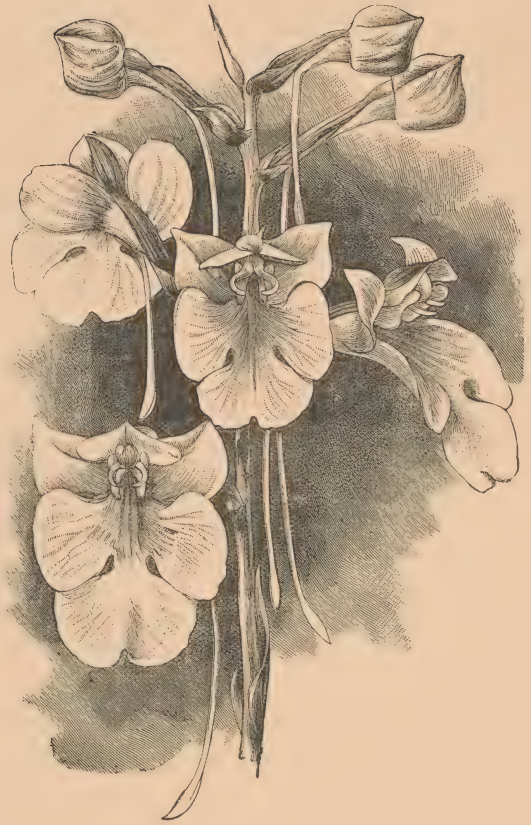
Stelis tenuis Lindl. Ric.
Lindl. Sert. Orch. XII. Pl. 16. 1.
Habenaria tenuis Rich.

M.S. del. J.N. Fitch lith

Vincent Brooks, Day & Son, Lith. Imp.

L. Reeve & Co. London.

Habenaria Luzoniana



HABENARIA CARNEA.

Eine prachtvolle Neuheit.

748 Eine schoene Pflanze in Bluete
749 Eine „ „ „ „

HEMIDYCTIUM MARGINATUM.

Ein sehr distinctes neues Farrn. Sehr zu empfehlen.

750 Eine schoene Pflanze
751 Eine „ „
752 Eine „ „
753 Eine „ „
754 Eine „ „
755 Zwei gute Pflanzen
756 Zwei „ „
757 Zwei „ „

BILBERGIA SPECIOSA.

Schoene Bromeliacee mit karminroten, pyramidenfoermig stehenden Bracteen und blauen Blueten, welche in den Axen der Bracteen sitzen.

758 Eine schoene Pflanze

KENTIA FORSTERIANA SAMEN.

759 Eine Kiste mit 500 Samen
760 Eine „ „ 500 „
761 Eine „ „ 500 „
762 Eine „ „ 500 „
763 Eine „ „ 500 „

KENTIA BELMOREANA SAMEN.

764 Eine Kiste mit 500 Samen
765 Eine „ „ 500 „
766 Eine „ „ 500 „
767 Eine „ „ 500 „
768 Eine „ „ 500 „

PHŒNIX RUPICOLA SAMEN.

769 Ein Carton mit 500 Samen
770 Ein „ „ 500 „
771 Ein „ „ 500 „
772 Ein „ „ 500 „
773 Ein „ „ 500 „
774 Ein „ „ 500 „
775 Ein „ „ 500 „
776 Ein „ „ 500 „

Habenaria bractescens
Rchb.f.

Rich & Gal. Orch. Mex.
tab. 39

Habenaria
latiflora
Rich & Gal.

M.S. del, J.N. Fitch, lith. Vincent Brooks, Day & Son, Imp.

L. Reeve & Co. London.

Habenaria longecalcarata

Bot. Mag. 2957

Habenaria longicauda. Hook.
Demerara.

Bot. Mag. 2726.

Habenaria leptoceras. (L. Rich.) Hook.
Brasilien. Rio.

M.S. del, J.N. Fitch lith. Vincent Brooks, Day & Son Imp

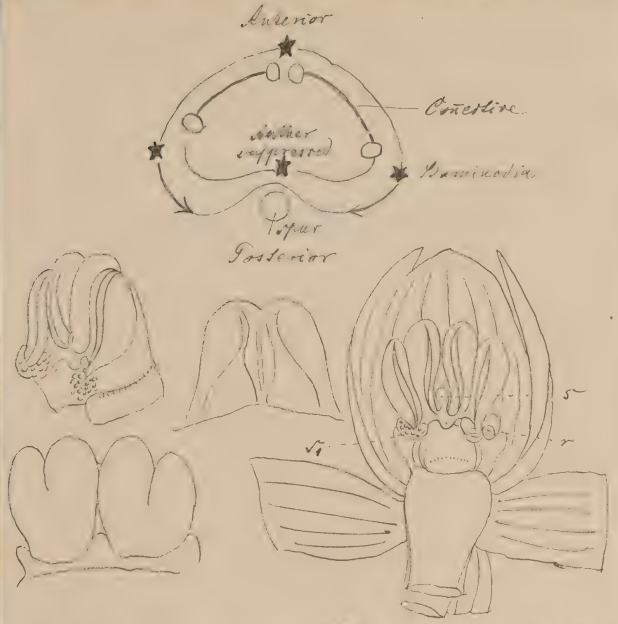
L. Reeve & Co. London

Habenaria Elwesii Hook

Copy-Ho 38 B.

(Stelandiera foliosa)

= Helcia maxi Hook.



Mouthparts of Hab. Calorandra.
Journ. Lin. Soc. II. 104. t. 1. Henslow
Cambridge.

Mr. Henslow explains it for the Lamiaceae. It is for the Labiatae Halbert Blackwell. It is also given for the Cyperaceae and Compositae.

Pfl. Ab. N: 83.

Herb. N: 4382.

Habenaria

F.C. Lhm. del.

Rich. & Gal. Orz. Ker. Lib 48.
Hab.
Spathacea
Rich. & Gal.

Harvey. Thesaur. cap. II. tab. 177.

*Polystachya Sanderson*ii. *Harv.*

Bot. Mag. 2947

Habenaria macroceras Spreng.
Jamaica.

Tr. Linn. Soc. vol. 8. f.

Habenaria procera. Lindl. Gen & sp. 306

Sierra Leone.

Habenaria peloroides. Par. & Rchb. f.

Trans. Roy. Soc. Edinburgh XXXI, 1886

Botany of Socotra Tab 82. B

Habenaria socotrana Balfour.

Habenaria
ceratopetala A. R.
Testam. fl. Abyss.
T. 88.

A. Rich. Tent. fl. Abyss. II. 295. t. 88.

Habenaria acrobopetala. A. Rich. Pl. sc. nat. II sér. XIV
p. 267 t. XII. fig. 4.

Sep. inferiora appendice antice aucta.

Caule 1½' fol. caulin. saepius 3. 2 inferiorib. approximat. ellipt. acut. Spica longiuscula, bract. ellipt.-lanc. acut. ovarium aequantib. Sep. superiore erecto subgaleato acuminato, angusto. Lateralib. dependentib. oblig. acuminat. valde inaequilater. Inferiorib. lin. acut. membranac. sep. supremo approximatis antice ad imam basin appendice exacte lineari subulato, exserto, 3plo longiori, spiralitèr convoluto, acuto. Lab. 3partito, laciniis submembranac. lanc.-linearib. acut. aequilong. Calcare ovarium superante apice inflato.
In montos. circ. Adua — Augusto fl —

Die pet. sind klein, dünnhäutig, lanzettl. & fast linear. ihre Anhängsel dagegen sind dick, fleischig, fast spiriemenförmig & 3mal länger als die sep. selber.

Archiv d. Sc. nat. XIV. vol. 16. 4

d. l'appendice hypogastrique supérieur plus ou moins long et l'autre qui contiennent peu ou point d'ovules et l'appendice tubuleux stérile

Habenaria rosellopetala
L. Rich.

Cette espèce est remarquable par ses appendices hypogastriques

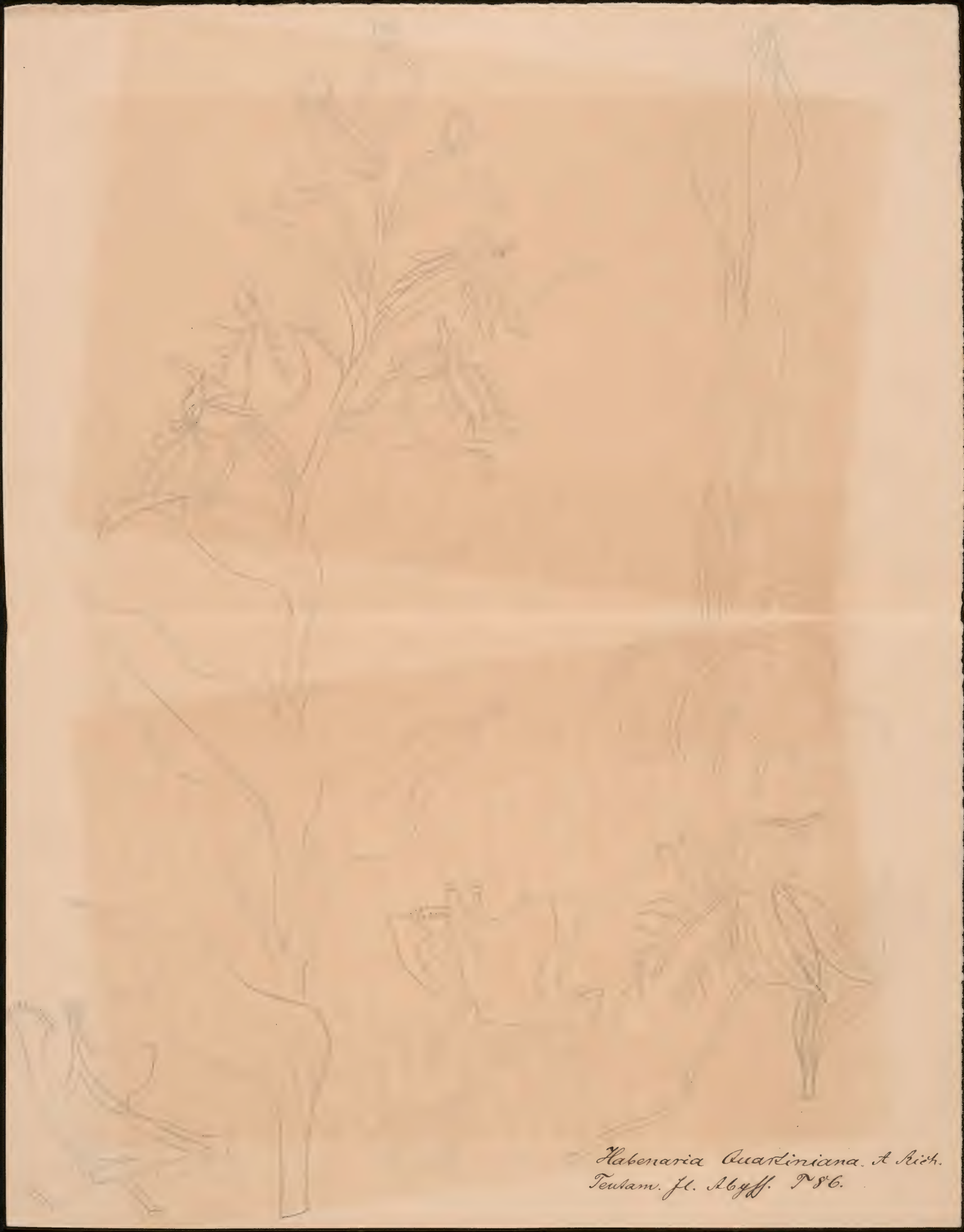
Trans. Linn. Soc. XII. Tab. 27.

Habenaria viridis. Ker. f. Tab. f.

Annales d Sc. nat. XII. tab 17. 3.

a. anthère
b. l'appendice rayé du stigmate
c. pouvoirs infér. du stigmate recouverts par la base du labelle

Habenaria parviflora A. Rich.



Habenaria Quartiniana. A. Rich.
Tentam. fl. Abyss. T. 86.

A. Rich. Tent. fl. Abyss. II. 293. tab. 86.

Habenaria Quartiniana A. Rich. Ag. fl. nat. Zoer. XIV. p. 271 t. XIV. f. 7. Kraezp. pl. Schimp. Trect. N: 1349.

* Sep. interiora nuda exappendiculata β. Labelli lacin. exteriori fimbriata. Hastae. Caule 1½' foliato basi vaginato fol. brevissime vaginantib. ovatis acutiss. basi obt. Floribus albido-virescentib. majusc. spicam laxiusc. barbatam efformantib. Bract. foliac. ellipticis - lanc. acutiss. basi sensim attenuat. ovarium aequat. superantib; Sepalis calycis superiore erecta obl. acuta a. internis approximato galeaeformib. lateralib. exterm. dependentib. supremo Zplo longiorib. oblig. inaequilateris acut. Pet. margine ciliat. antice valde perdurt. inaequilater. apice acut. Lab. 3partito sep. lateralib. externis longiori; lacinia media angusta linear obtusa, crassa. lateralib. aequilong. acut. margine exteriori fimbriato. Stipet. calcare longiss. ovarium 2plo superante.

Mt Sellenda per. Adona — Aug. Ad latus montium versus Chäda in regione media — Julio.

Les 2 lobes de l'anthère sont libres et distincts de l'espèce de cornet membraneux qui les réunit. Celui-ci forme un rebord mince, peu saillant qui se prolonge beaucoup en arrière où il se dédouble et constitue une sorte de gouttière de forme triangulaire. C'est de l'angle rentrant formant par cette gouttière occupé par le stigmate que naissent

les 2 appendices stigmatiques qui sont un peu comprimés saillants entre les 2 loges de l'anthère et très écartés à leur sommet qui est très-obtus.

Habenaria macrantha Hochst.
Richard. Tentamen Fl. Abyssin. T 8 f.

A Rich. Teus. fl. Abyss. II 294. t. 84.

Habenaria macrantha. Hochst. pl. Schimp sect. II. 1256

★ Sep. inferiora nuda, exappendiculata.

β Labelli laciniae exterior. fimbriato-dissectae

Caule excelso 1½ ultra, fol. basi vaginantib. elliptico-obl. acutiss in parte caulis superiore in bracteas decrescentib. Floribus maxim. virescentib. spicam oliganth. efformantib. Bract. foliac. ovali-lanc. acutiss. flores superantib. Sep. supremo ovali-acuto concavo c. internis approximat. galeato Labellis paululo ♂ ovali-obl. acut. malequilateris; internis supremo aequalib. versus partem inferiorem antice grossiuscul. Lab. 3partito laciniis mediis obl. angusta obt. integra, lateralib. longiorib. margine exteriore fimbriato-dissect; calcare labello 2plo breviore obtuso.

In regione media ad Entibeduab versus Choaia. prov. Semiēn mense Augusto.

Sehr ähnlich der H. Quartiniana. Blth 2mal grösser aber weniger an Zahl. Bract. länger & breiter im Verhältniss z. Blüthe die Farbenfortsätze gleichen einem Fusse. der die Zehen abwärts & die Ferse nach oben hält.

Habenaria virens
№ 3915 Schweinfurth
Sudan on Lehm near
Gandfluss near Kattfeld
29 June 1870
Im Lande der Niamniam

Tavola 3. Sc. nelan XIV. t. 17. 2.

Rebouxia vaginata. t. flor.

[redacted]

a. spatha
b. ovario e l'anthere
c. stamenodes
d. appendices labellares
e. perianzio segmentiqua inferna

Sowerby d. Br. mat. XII. tab. 15. f. 1.

a. capsula vagin. exterior
b. capsula calycina
c. appendix antherae
de primordio.

Melaleuca acutifolia. A. Rich.

Bot. Mag. 2926

Renatea speciosa. Willd.
Cape.

Habenaria Lawii
Linch n. 4234

HABENARIA MILITARIS, *Rchb. f.*

Chromo: P. Stroobant, Gand

M. S. del. J.N. Fitch lith.

Vincent Brooks, Day & Son Imp.

L. Reeve & Co. London

Habenaria rhodocheila

M.S. del. J.N. Fitch lith. Habenaria rhodotila Vincent Brooks, Day & Son Imp.

L. Reeve & Co. London.

7161

313

1529. Cynorhis. Rouan.

1555. Neotli

8053
1906.

M. S. del., J.N. Fitch lith. Vincent Brooks, Day & Son, Lith. Imp

Cypripedium [illegible]

M.S. del. J.N.Fitch lith.

Vincent Brooks, Day & Son Lt.d Imp.

L. Reeve & Co. London.

Cycnoches ventricosum Rolfe

Cyrtopodium calanthoides Kunth
var. purpurascens ?

M.S. del. J.N. Fitch lith

Vincent Brooks, Day & Son Lith Imp

L Reeve & Co London

M.Fitch del. et lith.

J. Bonvé & C° Imprim.

Brooks, Day & Son Imp.

Cypripedium purpuratum.

Cyperus papyrus L.

1998.

Lysorthis fastigiata.

Lysorthis Thouars. Sepala aequalia connivenlia. Petala sub sepalo superiore agglutinata. Labellum columna connatum calcaratum saepius 4-partitum. Sepala multo majora et Lesturae diversissimae. Columna nana. Anthera horizontalis v. recurvinada, loculis lateralibus elongatis. Rostellum planum (v. falcatum) 4-labellum 3-partitum. Pollinia glandulis nudis. Stigma lobis 2 erectis rostelli lobis lateralibus adpositis. Herbae Africae austr. & insularum Mascarensium, radicibus fasciculatis. Flores nunquam herbarei. Caules saepius squama vaginante in medio. Gen. & sp. Orch. 331.

L. fastigiata. Bulbis binis radicalibus oblongo-lanceolatis acuminatis 1-vaginatis basi caule nunquam alo, raceno corymboso, labello 4-lido: laciniis aequalibus lanceolatis, calcare longissimo filiformi. Gen. & sp. Orch. l. c. cum synon.

Sepala calus rosea intus virescentia. Petala rosea, sepalo superiora agglutinata. Labellum pallide herbaceum basi calus glandulosum, sepalis & pals majora, roseo tersissime lineatum, basi intensius; calear roseum. Anthera albopurpurea, brevis. Rostellum virescens. Stigmatis lobi labellum pulvinati, carnei pachypetalosi. Rostellum compressum, falcatum.

Cynosorchis fastigiata Thouars t. 13
Orchis mauritiana. Pers. fl. Maur. n. 169. nec Lamarck.
Gymnaden. fast. Rich. Orch. Maur. 25
Orchis fastig. Spreng. Syst. veg. III. 687.

The lip ovate with the column the great keeled bifid rostellum the horizontal or resupinate anther are the principal characters of this genus. The lip moreover is usually 4 lobed but C. squamosa is an exception.

Bot. Reg. 1998.

Cymorchis fasciata Aubert du Pet. Th.

Isle de France.

M. S. del, J.N.Fitch lith. Vincent Brooks Day & Son Imp.

L Reeve & Co London.

Cyrtochilum grandiflorum.

Bull. Soc. Bot. d. Fr. T. 4 (1857) t. 14.

4 (2e)

314. Hemipilia. Lindl.

Bull. Soc. Bot. de France T. 44 (1897) t. 14.

A-G Hemipilia bicalcarata Finet
H-M " cruciata Finet

M.J. del. J.N. Fitch, lith.

Lovell Reeve & Co. 5 Henrietta St. Covent Garden London

Lovell Reeve, Brooks, Day & Son, Imp.

Hemipilia amethystina

Menispermum cordifolium Lindley

Bot. Mag. tab. 6920.

Hemipilia calophylla Par. & Rbd.
Lond. Journ. Bot. XII 197. Otia, p. 38.

Transact. Linn. Soc. Lo. 2 Pl. 1. 35
Cyclamen europaeum var. ?

Z. Voluceau
Tab. 40.
Epidendrum
calcaratum Lam.
Flores
albi.

SOME HIGH-CLASS CANNAS.

THEIR WONDERFUL MARKINGS ARE BRIGHTER THAN THOSE OF MANY ORCHIDS.

Canna flaccida Salisb.

t. 22
Roscoe del. et sculpt
1793
Canna flaccida
Salisb

1. Elfe
2. Kronprinzessin Cäcilie
3. Direktor M. Holtze
4. Konsul W. Vellnagel
5. Wilhelm Tell
6. Karl Kirsten
7. Stadtrat Heidenreich
8. Isabella Breitschwerdt
9. Mephisto
10. R. Wallace
11. Goethe (Neuheit für 1907)

Lith. u. Druck der Art. Anstalt Emil Hochdanz, Stuttgart

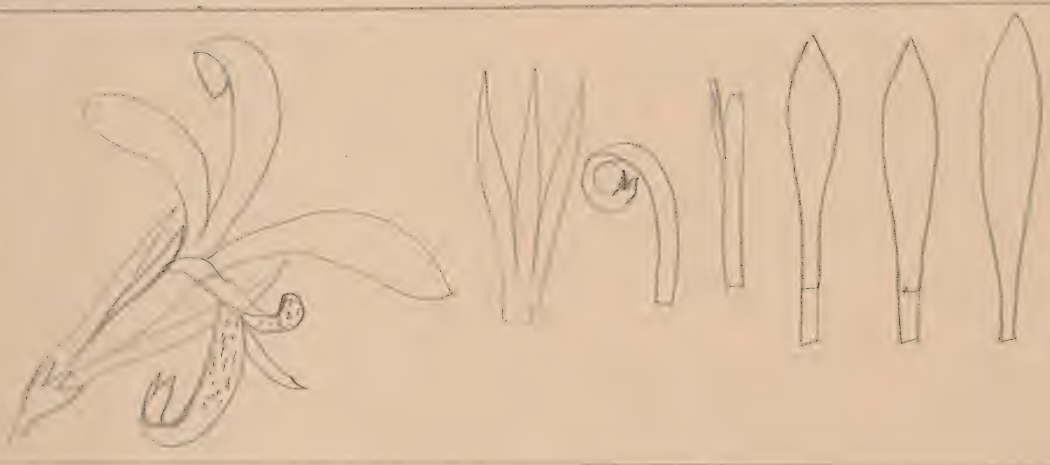
Canna (fragrans) indica

Canna longifolia Roscoe

Canna Lamberti

Cassia undica Rox 1
Expansa Sid

C. Leuberta
Rox 2



C. pectinata
Rox 3

C. latifolia
Rox 4
= C. appendiculata Roxb

C. circulata v. flava
Ross t. 13.

C. cernua Ross 15.

C. sanguinea
Ross. 16.

C. speciosa
Ross 17

C. pallida
Ross 19

C. pallida var
Ross 20

C. acuminata
Ker 11.

C. denudata
Ker t. 23

C. denudata
var.
Ker t 24.

Sonderabdruck
aus Fedde, Repertorium XIV (1916),
pp. 292—298.

XLVIII. ***Loganiaceae*** auct. Fr. Kränzlin.

391. **Spigelia Rojasiana** Kränzl., spec. nov.

Suffruticosa. Caules simplices, ima basi lignosi, 18 ad 24 cm longi, obscure quadranguli, glabri. Foliorum paria 6 v. 7 in caule, (nunquam quaterna), erecta, internodiis aequilonga v. paulo longiora. Folia oblonga v. ovato-oblonga, obtusa v. brevi-acutata, subtus 5-nervia, nervis basi latiusculis, apicem versus mox evanidis, stipulae minutae tuberculiformes, folia 2,5 ad 3,5 cm longa, ad 2 cm lata, infima et suprema paulo minora. Cincinnus 10- ad 15-florus, post anthesin strictissimus, bracteae ovato-lanceolatae, acuminatae, dorso carinatae, 8 ad 9 mm longae, calyces non aequantes; rhachis angulata, tortuosa, glabra. Calyx sub anthesi profunde, post anthesin basin usque fissus, segmenta linearia, dorso manifeste carinata, ad 8 mm longa, corollae dimidium aequantia; corolla anguste infundibuliformis, segmenta paulum inaequalia, ovata obtuse acutata, pallide rosea v. alba, roseo-limbata; tota corolla 1,5 cm longa, in orificio 4,5 ad 5 mm diam. Capsulae globosae 3,5 mm diam. — Fl. Septembri — Decembrem.

Paraguaria septentrionalis: Sierra de Amambay in campis siccis pr. Punta Porá, Rojas no. 9810. Unicum! — In regione flum. Yhú in campis aridis, Hassler no. 9482. Unicum!

Ich wäre geneigt, die Pflanze mit *Sp. Blanchetiana* Benth. zu identifizieren, aber die Dimensionen sind bei jener Art sämtlich kleiner und auch die Längenverhältnisse zwischen Kelch und Krone verschieden.

Ferner sind die Abschnitte der Blumenkrone dort lanzettlich und hier breit eiförmig, die Kapsel ist dort wenig kürzer als der Kelch, bei *Sp. Rojasiana* dagegen steckt sie tief in dem sehr viel längeren Kelch. — Beide Exemplare waren als „Unicum" bezeichnet, was darauf hinzudeuten scheint, dass sie nur vereinzelt auftritt.

392. **Spigelia chamaedryoides** Kränzl., spec. nov.

Suffruticosa, ramosa, pars quae adest, 25 cm alta. Caulis infra obscurius, superne argute tetragonus, ubique sparsius, infra nodos dense setosus, internodia 3 ad 6 cm longa. Folia fere omnia opposita, excepto summo verticillo ubi quaterna, subsessilia, supra brevi-papillosa, subtus brevi-pilosa, margine revoluto, irregulariter inflexo ideoque sinuato, pe vera tamen integro, laminae 1,5 ad 2,2 cm longae, 1 ad 1,5 cm latae, quam internodia semper breviores; stipulae breves, triangulae, satis firmae pilosae. Spicae tenuissimae, ad 6 cm longae, per totam longitudinem floriferae, floribus utplurimum 12, rhachis calycesque (sub lente valido) brevi-adpressoque hirsuta, bracteae lineares, calyces non aequantes, calycis laciniae lineares, 4 mm longae. Corolla (unica mihi visa) 4 ad 5 mm longa, subcylindracea, supra paulum dilatata, lobi ad $^2/_3$ totius corollae descendentes, trianguli, acuti; capsulae maturae mihi non visae, calyces plerique steriles, — Fl. Octobri.

Misiones: Posadas y suburbios, Municz no. 12.

Der Speziesname überhebt mich einer langen Beschreibung. Die Pflanze sieht absolut aus wie ein im Verblühen begriffenes etwas dürftiges Exemplar unserer *Veronica Chamaedrys*, wozu allerdings zu bemerken ist, dass die Buchtung der Blätter streng genommen nicht vorhanden ist, sondern durch unregelmässiges Umschlagen der Blattränder zustande kommt. Die Nebenblätter sind kurz, aber ziemlich hart. Der Aufbau des ganzen Gewächses ist streng sympodial, überall mit gegenständigen Blättern, bis schliesslich am Ende jedes Sprosses durch Unterdrückung des letzten Internodiums der vierblättrige „Quirl" entsteht. Von Blumenkronen war nur eine vorhanden und diese war ziemlich verwelkt, es kann daher sein, dass meine Diagnose hier einer Ergänzung bedarf. — Von den bekannten Arten steht *Sp. scabra* Cham. u. Schl. dieser hier am nächsten. Diese soll aber ein kräftiges Gewächs sein, und selbst dies Merkmal bei Seite gesetzt, stimmt die Blattform nicht. Ebenso scheint *Sp. Humboldtiana* Cham. u. Schl. etwas ähnliches zu sein. Das Aussehen des Gewächses ist das einer echten Ruderalpflanze, wozu die Notiz „posadas y suburbios" gut stimmt.

393. **Spigelia caaguazuensis** Kränzl., spec. nov.

Suffrutex 5 ad 20 cm altus. Caules plerumque basi ramosi, decumbentes, raml v. caules secundarii ascendentes, omnino dense glanduloso-pilosi, teretes v. obscurissime tetragoni. Folia omnia in paria disposita, nunquam quaterna, quam internodia breviora v. utplurimum illis aequilonga, sessilia, ovata, acuta, subtus nervis 5 ad 7 pallidioribus praedita, in utraque facie pilosa, praesertim subtus in nervis, maxima 3,5 cm longa, 2—5 cm lata, pleraque 1,3 cm lata,

rami in superiore parte caulis plerumque singuli, stipulae nullae. Cincinni pauci- ad pluriflori (10 ad 25), folia suprema excedentes, rhachis necnon bracteae calycesque glanduloso-setosa, bracteae lineares, acuminatae, 7 ad 8 mm longae, quam calyces brevissime pedicellati paulo breviores. Calycis segmenta linearia, basin usque libera. Corolla satis ample infundibuliformis, laciniae ovato-oblongae, obtuse acutatae, 6 mm longae, 4 mm latae, corolla extus praesertim in nervis pilosa, intus glabra, alba, roseo-marginata v. rosea, purpureo-marginata. — Fl. Februario.

Paraguaria: Prope Caaguazu in campis, Hassler no. 8951, 8951a.

Im Habitus zeigt diese Art eine gewisse Ähnlichkeit mit *Sp. Rojasiana* Kränzl., aber sie ist von der Basis des Stammes bis zur Blumenkrone dicht drüsig behaart, ihre Blüten sind wesentlich grösser und die Nebenblätter sind völlig reduziert. Auch bei dieser Art fehlen die vierzähligen Quirle durchaus.

394. *Spigelia guaranitica* Chod. et Hassler, Pl. Hassl., II, p. 204.

Var. **interrupta** Kränzl., var. nov.

Differt a typo statura paulo robustiore, praesertim pari foliorum quam cetera multo minorum medio in internodio interjecto. Haec folia bene petiolata, toto ambitu rhombea v. irregulariter et oblique orbicularia, interdum spathulata.

Paraguaria: In silvis Pacoba, Hassler no. 4507, in dumetis pr. Limpio Hassler no. 3459.

Ich stelle die Varietät mit einem ? auf, denn es ist nicht ausgeschlossen, dass es sich um einen lusus naturae handelt. Als besonders üppige Exemplare möchte ich die beiden, welche ich sah, nicht halten.

391. **Buddleia Misionum** Kränzl., spec. nov.

Frutex? Specimina, quae praestant, 60 ad 100 cm longa, certe tamen longiora. Caules tetragoni, tota planta exceptis corollis ubique intus tomento eodem densissimo intense brunneo vestita, pili tomenti more *Verbascorum* stellati. Folia sessilia, basi auriculata et auriculis cohaerentia, ovata v. ovato-lanceolata, crenato-dentata, acuta v. acuminata, nervis subtus valde prominulis reticulata, maxima mihi visa 8,5 cm longa, 3,2 cm lata, satis densa, caulem ubique vestientia, interfloralia 3 cm longa, internodia inflorescentiae 3 ad 4 cm longa, suprema breviora. Flores in capitula v. cymas subsemiglobosas, 1 ad 1,8 cm diam. metientes, pedicellatas dispositi, bracteae cymarum lineares, pedicelli cymarum 1 ad 2 cm longi, inferiores quam bracteae longiores, supremi breviores. Calyces circ. 4,5 mm longi, obtusissimi, corollae vix longioris segmenta explanata, late oblonga, obtusa, horizontalia, glabra; stamina in fauce corollae inserta illamque haud excedentia; stylus longe exsertus, 7 ad 8 mm longus; capsula mihi non visa. — Floret a Julio ad Novembrem et certe diutius.

Misiones: Campo, A. de Llamas S. Ana no. 24, 214, 842.

Eine der unerfreulichen Arten, welche Anklänge an 3 bis 4 andere zeigen. Eine Behaarung so dicht wie hier ist nirgends beobachtet, die Farbe ein dunkles Kaffeebraun, aber keine Rostfarbe. Die Blätter am

Grunde geöhrt und zusammengewachsen, die Blütenstände nach Art von *B. globosa*, aber flacher, die unteren samt ihren Stielen halb so lang als ihre Stützblätter, die oberen länger als diese. Es finden sich Anklänge an *B. calycina* Benth., *B. Jamesoni* Benth., *B. lanata* Benth. und auch *B. perfoliata* H. B. K. Das Gebiet aller dieser Arten liegt weit nördlich, aber selbst wenn man sich über die pflanzengeographischen Bedenken hinfortsetzen wollte, bleibt bei jeder Art ein starker Rest Abweichungen. Von *B. brasiliensis* Jacq. und den sonstigen Arten der argentinischen Provinz ist ohnehin keine einzige auch nur entfernt ähnlich.

XLIX. *Iridaceae* auct. Fr. Kränzlin.

396. **Cypella grandis** Kränzl., spec. nov.

Cormus ovoideus, extus cortice verrucoso tectus, 7 ad 8 cm longus, basi 4 cm diametro. Folia circ. 4, linearia, basi plicata, acuminata, 50 ad 80 cm longa, 1,3 cm lata, rigida, manifeste marginata. Scapus teres, ad 60 cm altus v. altior, foliis strictis vaginantibus plicatis obsitus, vagina infima omnium longissima, ad 45 cm longa, apice obtusa, superiores multo minores, distichae, ut videtur pruinosae, florales inter se vix diversae, 8 cm longae. Flores ut videtur semper 2 inter maximos generis, ovaria 2 cm longa. Sepala reflexa deflexave, late oblongo-obovata, antice rotundata, ad 6 cm longa, 2,5 cm lata. Petala e basi lineari spathulato-obovata, basi concava, erecta, incurva, ad 3 cm longa, antice 8 mm lata. Filamenta libera, linearia, breviora quam antherae. Styli petalis subaequales, intus valde convergentes. Sepala petalaque lutea, petala basi pallidiora mihi visa, maculata, flores fugaces. Fl. Januario.

Paraguaria septentrionalis: Sierra de Amambay in campis altis Punta Porá, Rojas no. 10001.

Die Pflanze wird nach den Angaben des Sammlers bis 120 cm hoch, Dimensionen, welche von keiner bisher benannten Iridacee dieser Gruppe erreicht werden, auch nicht bei der (blau blühenden) *C. gigantea* Klatt aus Minas Geraës. Die beiden Hochblätter, welche den Blütenstand unmittelbar einschliessen, sind gleich gross und völlig krautig, beides zwei nicht ganz selbstverständliche Merkmale. Über die Spitzen der drei Griffelblätter wage ich nichts zu sagen; sie waren beim Trocknen gegeneinander gepresst und es würde bei der Zartheit dieser Organe kaum möglich gewesen sein, sie ohne Beschädigung zu trennen. Die nächstverwandte Art ist jedenfalls *C. peruviana* Baker, welche aber einen zarteren und schmiegsameren Aufbau hat als unsere Art dahier.

397. **Sisyrinchium Gilberti** Kränzl., spec. nov.

Radices tenuissimae. Folia radicalia ensiformia, linearia, acuminata, 16 ad 24 cm longa, 3 mm lata, 7- ad 9-nervia. Scapus aphyllus, circ. 30 cm altus, ceterum foliis omnino similis, in bracteam inflorescentiarum generalem, 3 cm longam productus. Glomeruli florum 3 v. 4 brevipedunculati, bracteae florales omnino paleaceae, cymbiformes, carinatae, carinis scabris anguste et pallide marginatae, acuminatae, circiter 1 cm

longae, pedicelli 1,5 ad 2 cm longi, sparsissime pilosi ut etiam ovaria, post anthesin deflexa. Sepala petalaque ovato-lanceolata, acuta, breviaristata, lutea, brunneo-lineata, 5 mm longa, 1,5 mm lata. Stamina apicem usque in tubum, extus longissime villosum, 2,5 mm longum coalita, antherae parvae, conniventes, stylus brevior; capsulae adultae glabrae, semimaturae sparse pilosae, depresso-globosae, 3 ad 4 mm diametro. Flores in glomerulo quoque 6 ad 8. — Fl. Augusto.

Paraguaria: In dumeto pr. flumen Tapiraguay Hassler no. 4289.

Die Exemplare unter dieser Nummer sind unter dem Namen *S. hirsutum* Baker in Pl. Hassl. II (1903) 271 verteilt. Ein Vergleich, der drei mir vorliegenden Stücke des Herb. Hassler ergab Abweichungen von Bakers, Originaldiagnosen in nahezu allen Merkmalen, am auffälligsten in den Staubgefässen. B. sagt von diesen: „stamina perianthio triplo breviora, filamentis liberis", die beiden Angaben dieses Satzes sind falsch und ausserdem fehlt die Erwähnung, dass die Antheren auffällig klein sind und dass die Behaarung der Staubgefässröhre hier länger und dichter ist, als sonst bei *Sisyrinchium* der Fall zu sein pflegt. Es finden sich sonst noch Abweichungen auch in den Abmessungen.

L. *Cannaceae* auct. Fr. Kränzlin.

398. **Canna Hassleriana** Kränzl., spec. nov.

Tuberidia et planta integra mihi non visa. Planta 80 ad 120 cm alta. Folia longe lanceolata v. ovato-lanceolata, acuminata, glauca, inferiora mihi visa, satis longe (ultra 10 cm) petiolata, lamina ad 34 cm longa, circ. 10 cm lata, folium superius 40 cm longum, 6 cm latum. Racemus folia bene excedens, folio 1 multo minore in scapo, ultra 40 cm longus, simplex, diu florens, rhachis angulata, longe producta, tota inflorenscentia minime corymbosa, cincinni 2,5 ad 3 cm inter se distantes, bracteae illorum orbiculares s. latissime obovatae, pruinosae, pedicelli 8 ad 10 mm longi, aequilongi, sub ovario dense papilligeri, flore altero multo serius evoluto quam flos primarius, ovarium sub anthesi subglobosum, 5 ad 6 mm longum, 5 mm diametro. Sepala oblonga 5 mm longa, obtusa. Petala lineari-lanceolata, acuminata, 3,5 cm longa, basin usque libera, tertium saepius deflexum. Staminodia fere basin usque libera, obovato-oblonga acuminata, obtuse, acutata v. obtusa, ad 4,5 cm longa, 1,2 cm lata, labellum e basi paulo latiore lineare, revolutum, in semicircrulum tortum antice spathulato-dilatatum. Stylus linearis, parvum 4 cm longus, stigma solummodo apicale. Pars foliacea filamenti linearis, saepius revoluta, anthera longa, tenuis. „Petala rubra" (sic vult collector v. cl.), suspicor staminodia esse rubra. — *Canna glauca* L. *β. rufa* Bot. Mag. t. 2302; *C. longifolia* Bouché in Linnaea XVIII (1844) 487 ex Kränzlin, Monogr. Cannaceae (1912) 46 in Nota cum? — Fl. Novembri.

Paraguaria: In palude in regione cursus superioris fluminis Apa. (Iter ad Paraguariam septentrionalem (Hassler no. 7883).

Ich habe, als ich die Cannaceen bearbeitete, meine Zweifel geäussert, wie man die Tafel 2302 des Botan. Magazine zu deuten habe. Dass sie

nicht *C. glauca* L. sein könne, sah ich sofort, aber auch zu *C. longifolia* Bouché stimmten sie nicht recht. Ich war erstaunt, unter den Hasslerschen Pflanzen drei unter sich ganz gleiche Exemplare zu finden, auf welche die betr. Tafel des Bot. Mag. genau stimmt. Damit wären die Zweifel auf eine recht unerwartete Weise gelöst. — Als no. 32a hinter *C. longifolia* Bouché in das System einzureihen.

399. **Canna amambayensis** Kränzl., spec. nov.

Tuberidia mihi non visa. Caulis 2- ad 3-metralis. Foliorum quae vidi maxima, oblonga v. ovato-oblonga, acuta v. acuminata, in apicem longum protracta, sessilia, longe arcteque vaginantia, circ. 40 cm longa, 13—14 cm lata, ipsa necnon caulis glaberrima, discoloria mihi visa (?), basi paulum inaequalia, margine tenui, sicco fragili, pallidiore zonata. Racemus gracilis, folia bene superans, 45 ad 50 cm longus, pluriramosus, rami parum divergentes, plerique erecti, circ. 10-flori, cum floribus, ad 25 cm longi, leviter fractiflexi, prophylla ramorum elongato-lanceolata, cymbiformia, acuminata, valde pruinosa, rhachis et principalis et secundariae angulatae; bracteae et cincinnorum et florum minutissimae, squamiformes, obtusae, mox deciduae, 5 mm longae, pedicelli stricti, ad 1,5 cm longi, in superiore parte verrucosi, ovaria sub anthesi parva, 5 ad 6 mm longa. Sepala lanceolata, acuminata, multinervulosa, 1,5 cm longa, basi 2 mm lata. Petala anguste lanceolata, acuminatissima, bina 6 cm longa, tertium multo brevius, acutum, omnia basi in tubum angustissimum, ultra 2 cm longum coalita, pars libera, 5 cm longa. Labellum erectum, strictum, basi latiore cetera phylla amplectens, late ligulatum, apice rotundatum. Filamentum paulo angustius, ceterum aequale, anthera paulum infra apicem inserta, haud longa, utrumque 5,5 cm longum, 7 v. 5 mm latum, filamentum utrinque tenui-petaloideum. Stylus fere basin usque a filamento sejunctus, linearis, stigma breve, zona stigmatica ceterum nulla, 5 cm longus, vix 3 mm latus. Capsula matura obovata, 3,5 cm longa, semina ellipsoidea, nigra, nitentia. — „Petala (suspicor staminodia) purpurea". — Fl. Aprili.

Paraguaria septentrionalis: Sierra de Amambay, ad margines silvarum humidarum pr. Punta Pará, Hassler no. 10422 et 10422a.

Im ganzen eine Art, welche an *C. denudata* Rosc. u. *C. Ottonis* Kränzl. erinnert. Auffallend sind die sehr kleinen, schuppenähnlichen Deckblätter, die langen, ziemlich straffen Blütenstiele der beiden zeitlich durch einen langen Zwischenraum getrennten Blüten. Die Blüten selbst erinnern an die der beiden genannten Arten, aber ihre Phyllome sind ganz gradlinig und nicht gekrümmt, der Griffel ist bis zur Basis frei, die Seite der Filamente, an welcher der Staubbeutel sitzt, ist völlig petaloid und nicht verdickt und schliesslich sind die Staminodien alle drei purpurrot. — Alles zusammen Abweichungen genug, um eine Zusammenziehung mit den beiden nächstverwandten Arten zu verbieten. *C. Linkii* Bouché kommt schon wegen seiner sehr lang gestielten Blätter nicht in Betracht und *C. meridensis* Kränzl. hat lanzettliche, längere Blätter und wesentlich längere Blüten. Damit sind die Arten der *Distemon*-Gruppe

mit kahlen Blättern und Stengeln zu Ende. Die Pflanze trägt reichlich Samen. Die Samenkörner sind ellipsoidisch, in der Mitte jedoch ein ganz wenig eingeschnürt oder verschmälert.

Im Habitus erinnert die Pflanze stark an die gleichfalls der südbrasilianischen Provinz angehörende *C. polyclada* Wawra.

C. glauca L. Rojas no. 302, 2783.

C. coccinea Mill., Hassler no. 3194.

Costus Pulcherrimus Poepp.
Bot. Mag. Fig. 1
1872. 518
Blüthen gelb
Kelch roth gefärbt

Bot. Mag. t 2085.

Canna lutea
(C. indica β. lutea)

Analyse ver
Rose t. 18

Bot. Reg. t. 1311.

Canna Lagunensis Link.

Bot. Mag. t. 2302.

Canna glauca
β. rufa

Bot. Reg. t. 1231.

Canna discolor Lindl.

Bot. Mag. 2498.

Canna edulis Ker.

Bot. Reg. t. 1276.

Canna (speciosa Ross.
coccinea Mill.

Bot. Reg. t. ~~1276~~.
1358.

Canna ~~speciosa Bosse~~. Achiras Gillies.

Fig. 1.

Aller Forcip.

Canna lanceata

K. Federation Exhibit.

Präsidial im Haus Garten Wien — 1835

3414 (4 x)

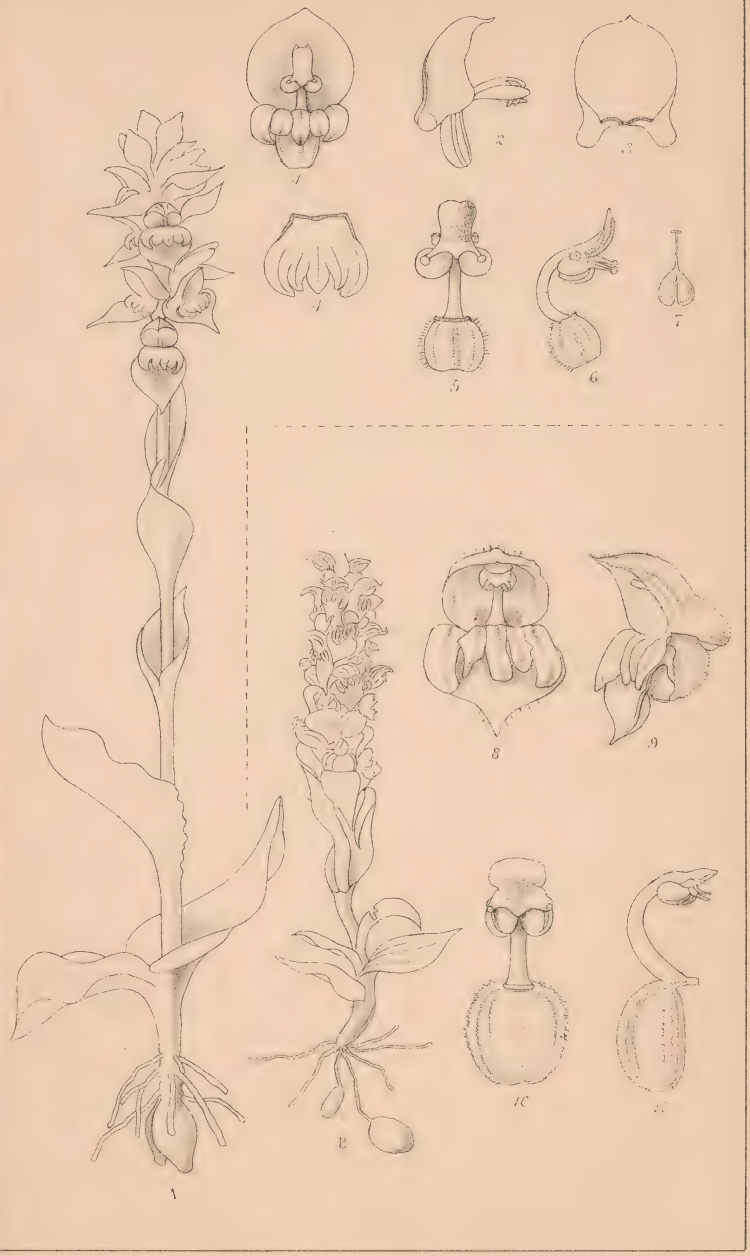
3/6.

Satyrium.

Reinw. del. ex vivo et fec. 1828

Hanhart. imp.

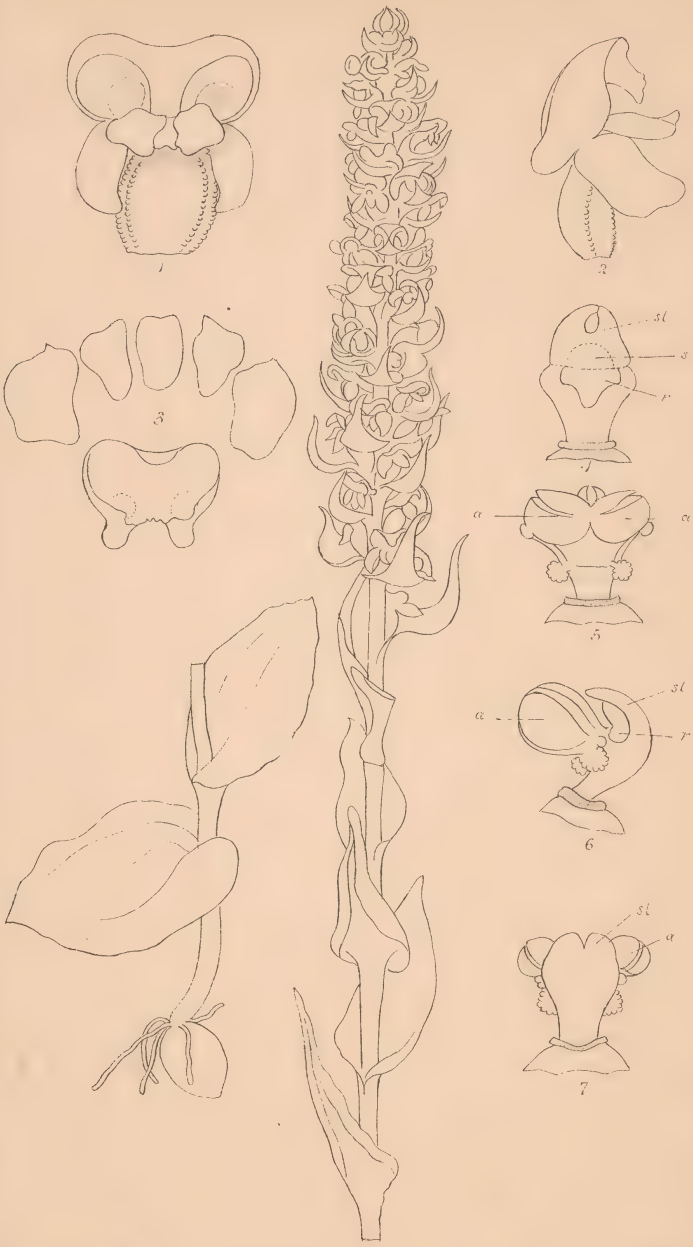
SATYRIUM STRIATUM. THUNBERG.



Blume del. Aug. 31. 1834. Hanhart imp.

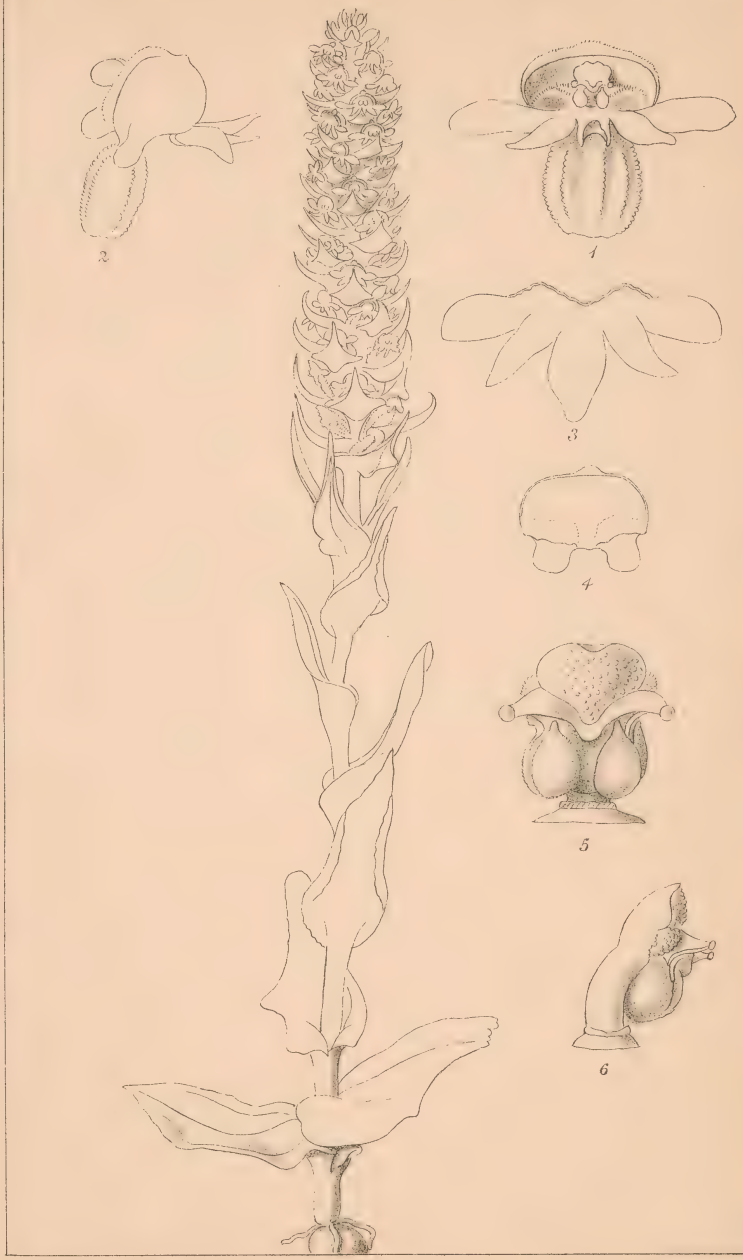
SATYRIUM BRACTEATUM. THUNBERG.

A var. lineatum. B. var. nanum.



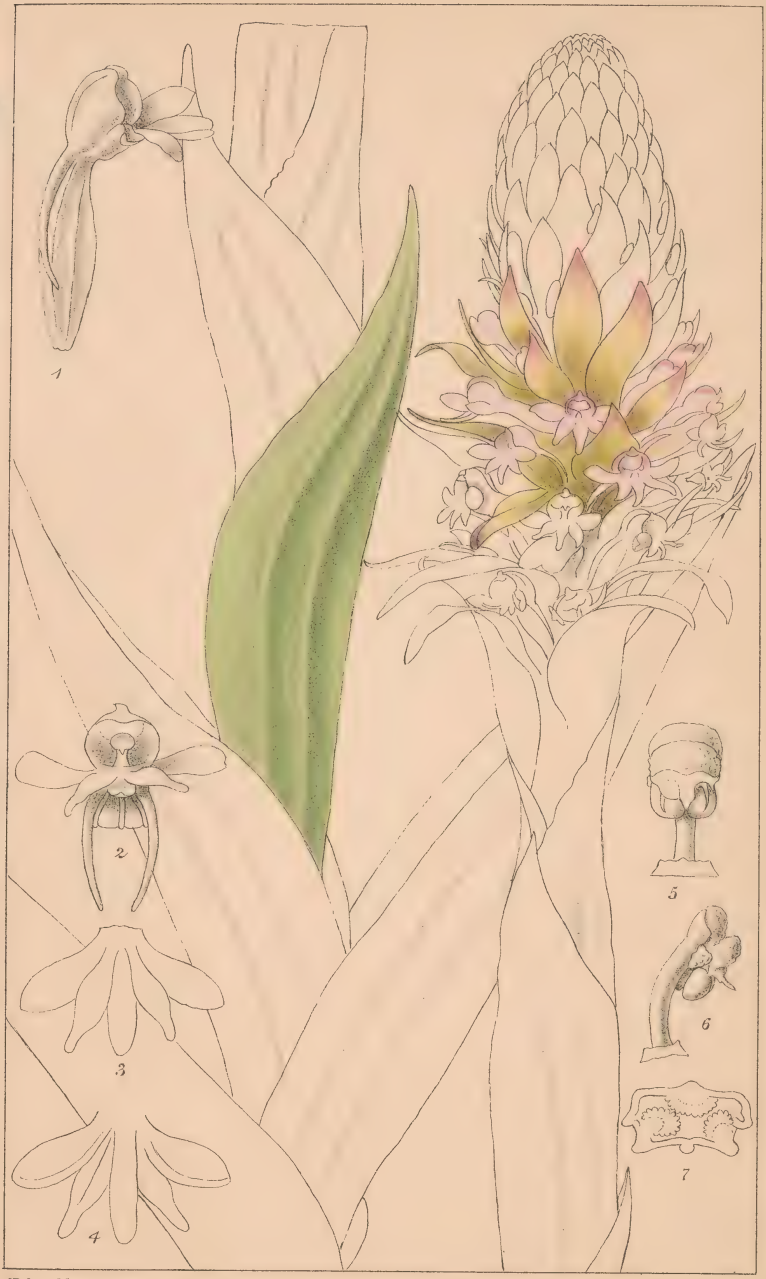
Ridius del. et lith. 1812. Kaufhold. imp.

SATYRIUM BICALLOSUM, THUNBERG.



Hannart imp

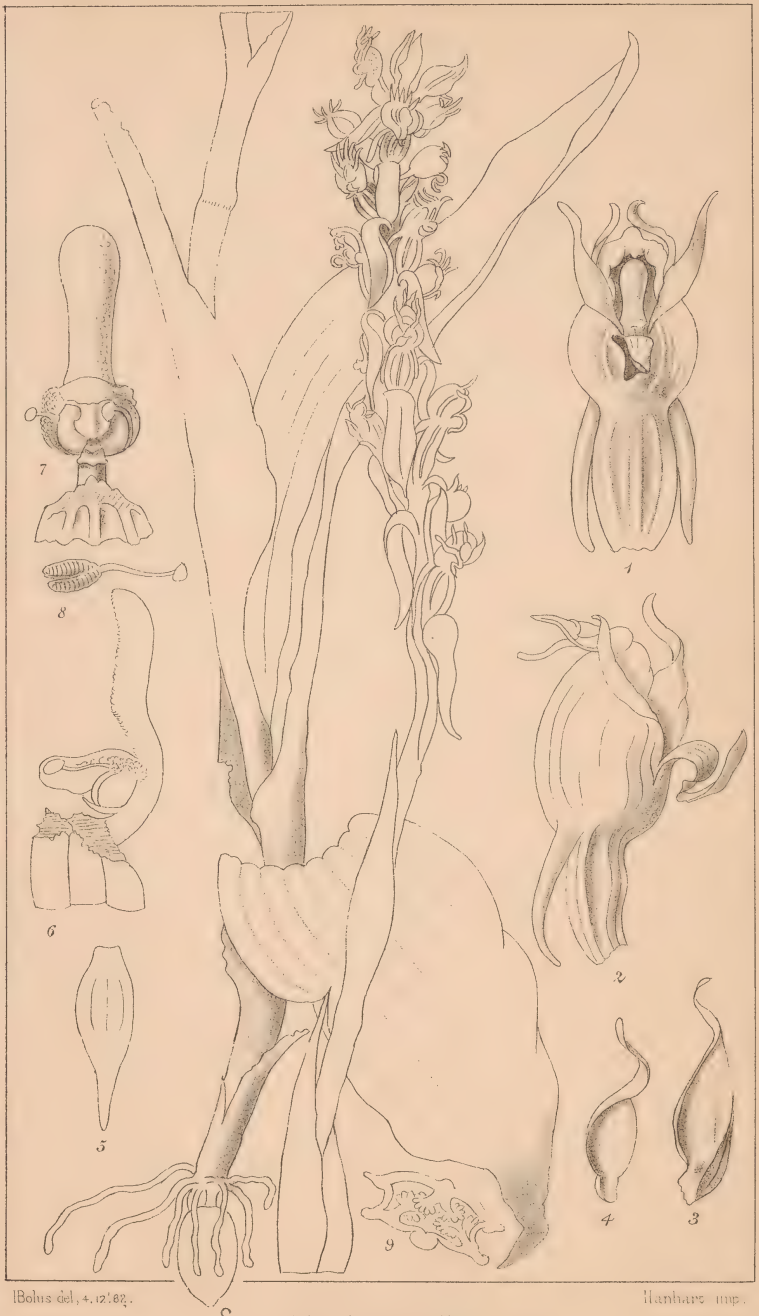
SATYRIUM LINDLEYANUM, BOLUS.



HBolus del., ex vivo. 30.12.1886

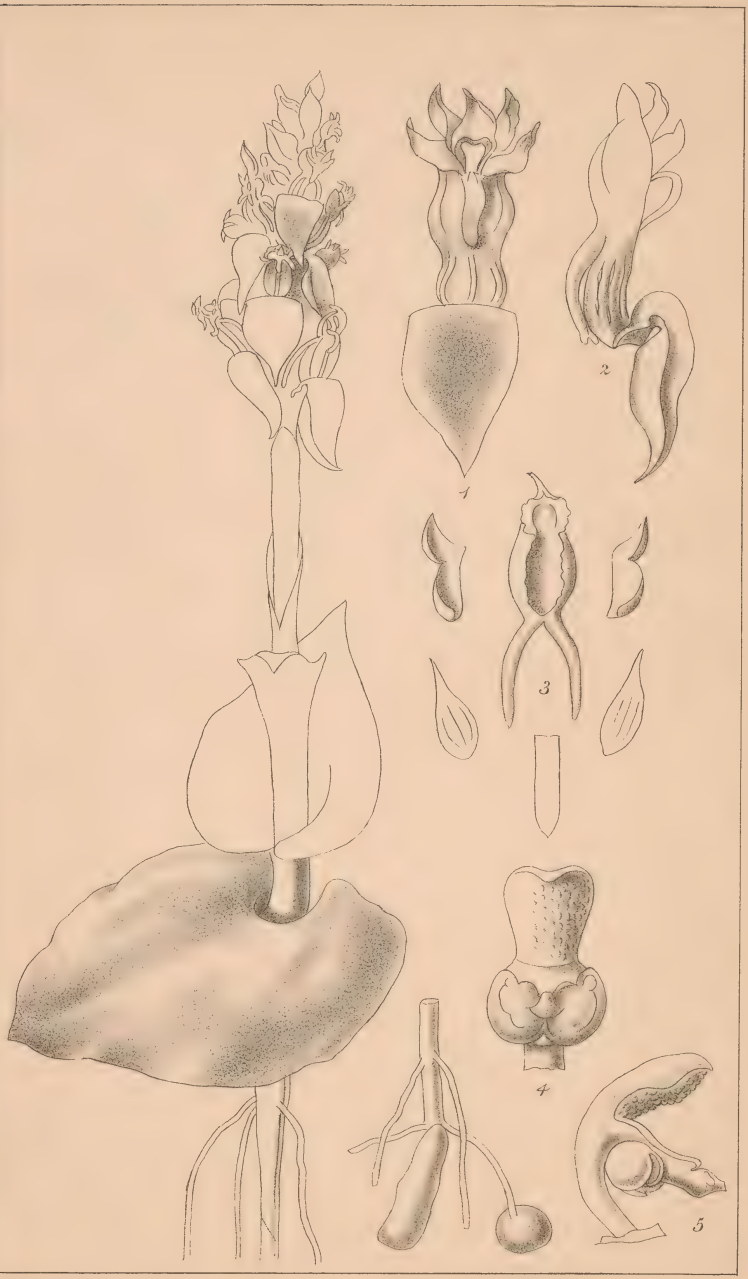
Hanhart imp.

SATYRIUM HALLACKII, *BOLUS*.



Bolus del. 4.12.82. Hanbury imp.

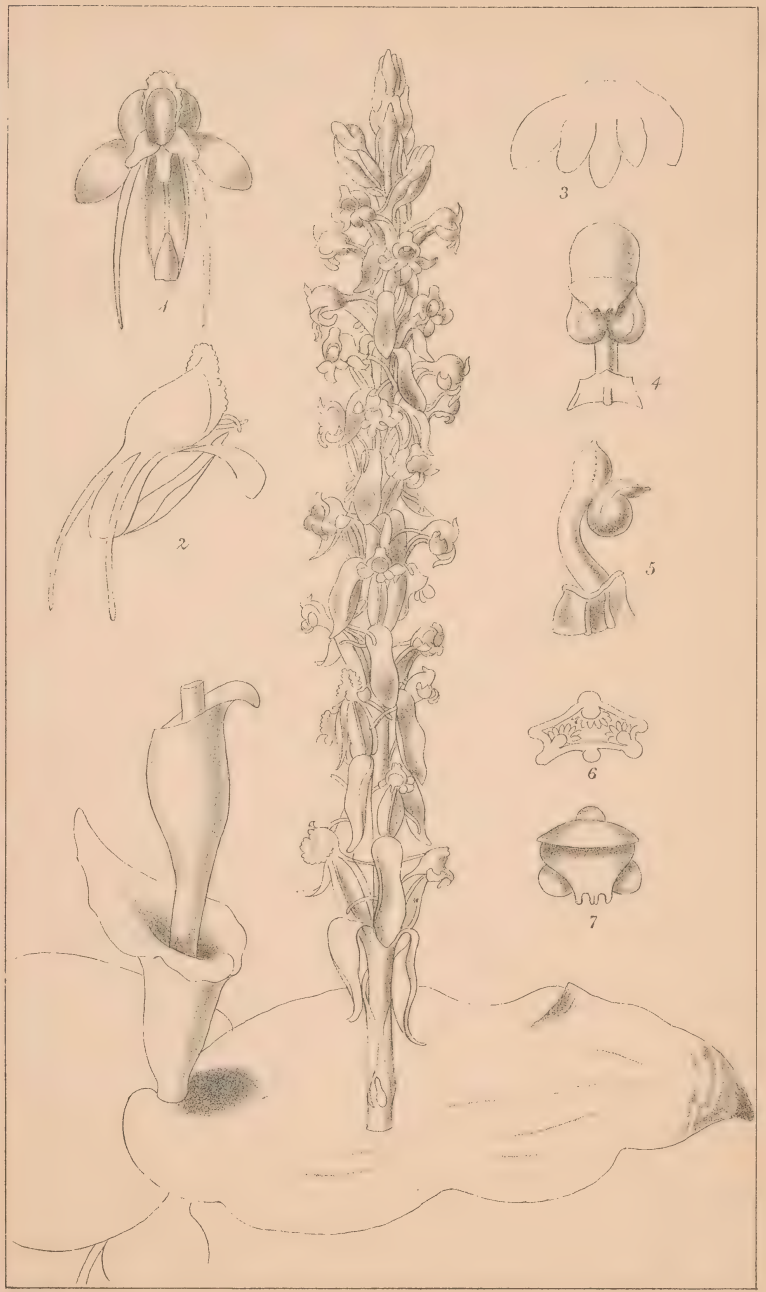
SATYRIUM LIGULATUM, *LINDLEY*.



Bolus del., 26. 9. '82.

Hanhart imp.

SATYRIUM EMARCIDUM, BOLUS.



HBolus. del 9 10.81

Hanhart imp.

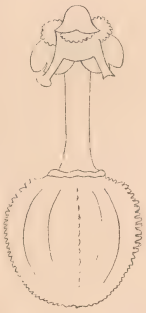
SATYRIUM OCHROLEUCUM, BOLUS.

Bolus, del. 20/12/84 Flanagan lith.

SATYRIUM RHYNCHANTHUM, BOLUS.

1

2



3

4

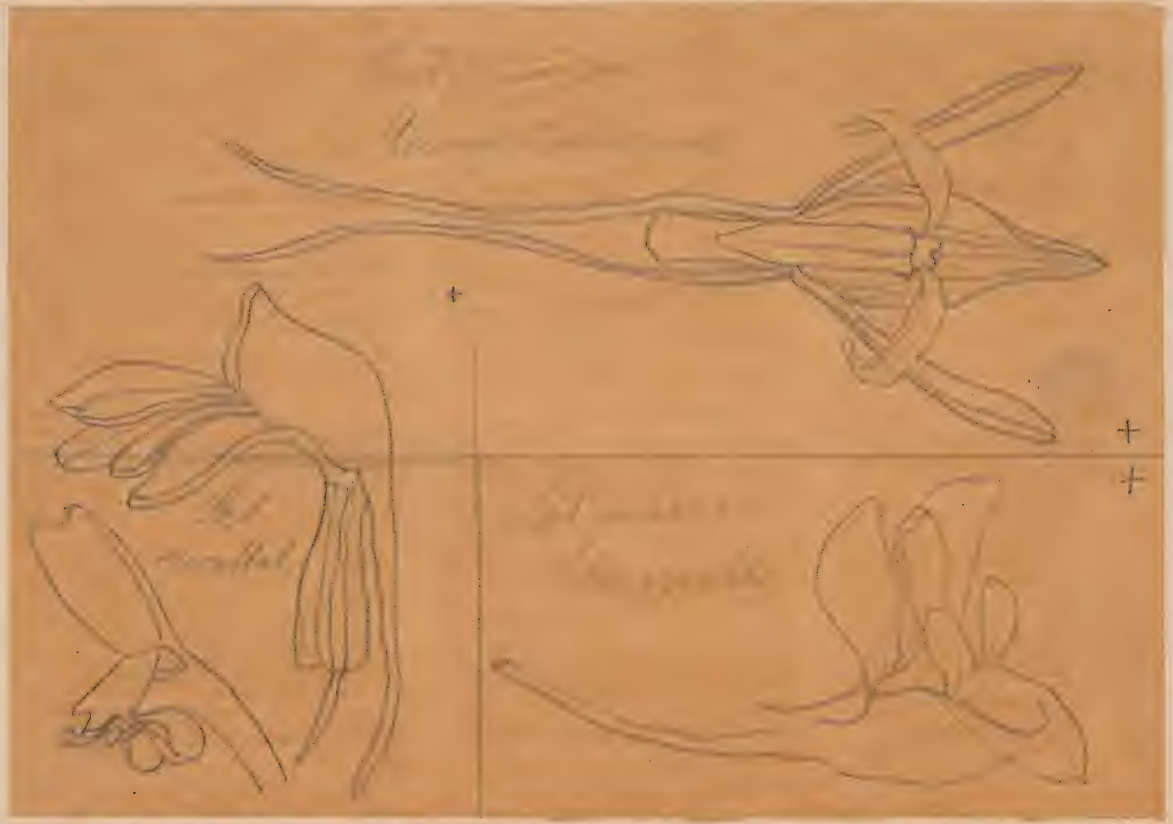
5

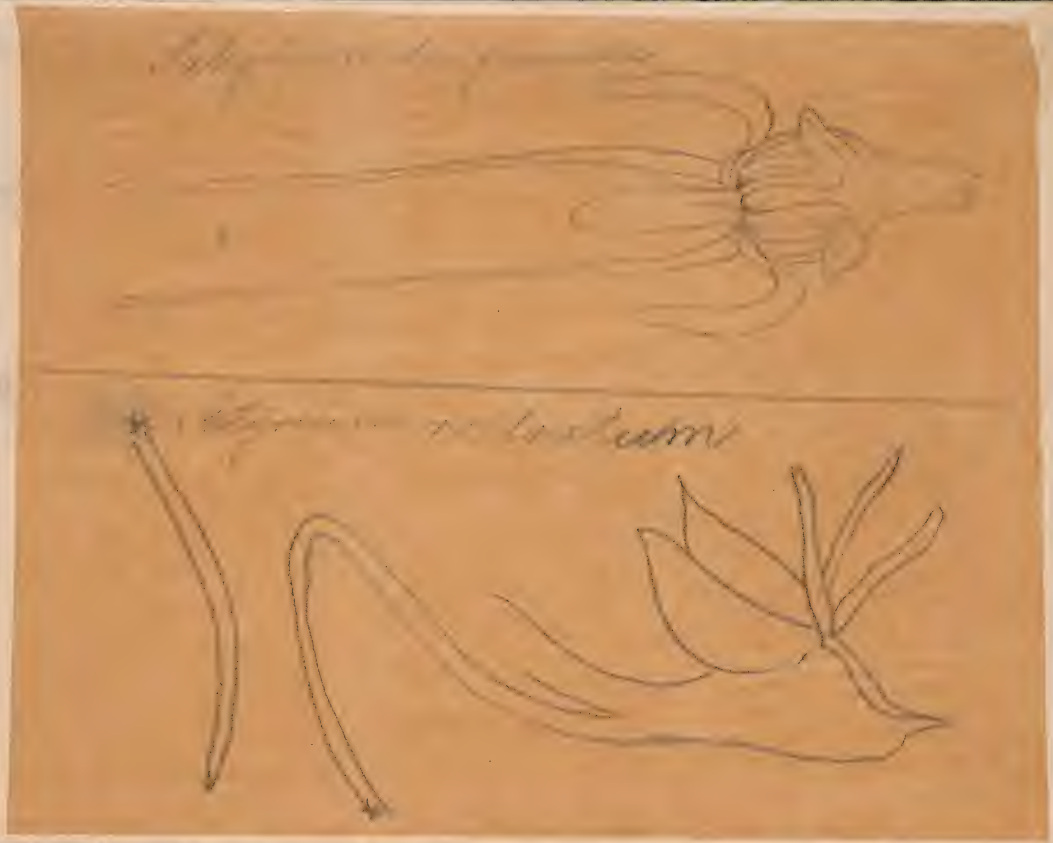
6

Bolus. ad. nat. lith.

Hanhart imp.

SATYRIUM SAXICOLUM, *Bolus*.





Fleurs renversées

M.S. del. J.N. Fitch. lith.

Vincent Brooks Day & Son Lith.

L. Reeve & Co. London

Selenipedium Sedenii Rchb.f.

M.S. del. J.N. Fitch lith. Vincent Brooks, Day & Son Imp.

L. Reeve & Co. London.

Ladyginia sphaerocarpa

Satyrium erectum.

Genus: Satyrium. Swartz.

Perianth. ringens, labio inferiore e sepalis petalisque connecto, superiore e labello galeato, bicalcarato aut bisaccato. Columna reflexis aut elongata. Anthera recupinata loculis parallelis aut divergentibus. Glandulae pollinicorum nudae, divaricatae. Stigma clabiatum labio superiore maximo inferius superante. Herbae habitu Orchidis.
(Linn. gen. pl. ed. 8. p. 395.)

Sat. erectum. Thunberg.

Foliis ovato-lanceolatis oblongis coriaceis margine cartilagineis scabris patentibus, sessilibus in vaginis coriaceis convolutis imbricatis nudatis, spica multiflora, bracteis oblongis coriaceis demum reflexis ovatis longitudine sepalis oblongis petalisque linearibus acutis labello oblongo galeato fere longitudine calcaribus ovario paulo brevioribus. Linn.

Satyrium erectum. Swartz.
Cap.

Bot. Mag. 7289.

Satyrium corrüfolium Swartz
var. *maculatum*
= *S. erectum* Lind. Orch. p. 340. Bolus Orch. Cape Pen. p. 124.

Satyrium pustulatum

Foliis binis radicalibus cordato-orbicularibus planis papillosis, vaginis caulis appressis apice caulisfoliaceis patentibus complicatis spica oblonga obtusa multiflora, sepalis lineanbus convexis recurvis obtusis petalisque conformibus minoribus patulis, labello oblongo antice margine revoluto dorso cristato apice subbisido recurvo; omnibus alte connatis calcaribus ovario paulo brevioribus.

Lindl. gen. sp. p. 341.

S. pustulat. Lindl. Bauer Illustrat. orchid. pl. t. 12, 13, 14 Fructification.

Satyrium pustulatum. Linn.
Cap.

Satyrium pustulatum Ldl.

Satyrium bifolium Hochst.
Beutamen Florae Abyssin. Tab. 92.

A. Rich. Tent. fl. Abyss. II. 300. tab. 92.

Satyrium bifolium A. Rich. Ann. sc. nat. 2ser. XII. 273 tab. XVIII. f. 2.. Hook. pl. Kumaon. vers III 1554

Fol. 2 radicalib. subopposit. ovalib aut suborbicularib. apice obt. aut subemarginat. membran. glabris. Caule 1 vaginato, vaginis long. lax. acut. aut subobtus. Flor. alb. maxim. spicam terminalem laxiusc. efformantib. Bract. ovalib. obt. autsubacut. foliac. viridib. reflex. flores aequantib. Lab. galeato obl. apice protracto obtus, ore aperto, calcarib. acut. ovaris longioribus. Sep. exter. obl. obt. cris tabelli infimam partem occupantib. interiis spathulato obl. obtusis. Gynopemis elongato, labio stigmatis superiore obl. obt. medio sulcato. inferiore obl. acuto.

In monte Tellenda pr. Adua. Oct. Loben & in montib. pr. Tecli (prov. Sana) Augusto.

Durch den Habit & die groß. weiß. rosa angehauchten Blüt. & Sat. cuculiat. Thuib. & S. candid. Lodd sich nähernd. Aber von S. cucull. durch d. spathelförmig. stumpfen & nicht lacerem sepala verschieden ferner durch d. stumpfe Labell. u. dadurch daß die Oberlippe des Stigma dick, fleischig. ganz & gestutzt ist aber nicht flach & klappig.

Satyrium coriophoroides. A. R.
Richard Tentam. fl. Abyss. P. 89.

Pentaneu fl. Abyss. II. 298 t. 89.

Satyrium coriophoroides A. Rich. Fl. Sc. ed. 2 vol. XIV. t. XVIII. f. 9.

[S. macrostachyum Kotsp. pl. Schimp. sect. III. 1606]

Caule florifero erecto 1' aut 1½'. Fol. caulin. vaginantib. parvul. ellipt. aut ad vaginam latam acutam reduct. & supprim in bracteas abeuntib. Fol. radicalib. oblanct. 2. juxta caulem floriferum. Flor. laete purp., spicam elongat. densam. bracteosam efformantib. Bract. lanc. rubimbricat. ellipt.-lanc. acut. flores aequantib. in parte inferiore erect. caeterum reflex. foliac. viridib. Sal. galeato, obt. antice fere basi usque aperto, apice antice obtuse apiculato. Calcaribus dependentib. recurv. apice obtus. ovarium non aequantib. Sep. omnib. basi inter se ovalibus lateralib. semi-obovalib. subaccret. basi angust. supremo. lateralibus aequilong. angust. lin. obt. glabris. Gynostemio brevi, brevirostri, stigmatis labio superiore lato erecto, subquadrato, margine dilatato, obtuso. ovarii collis glandulos.-puberulib.

In Col. herb. Sch. & rec. montis Sellenda. — Augusto. & prop. Aovar-Semaka prov. Chiré & in montib. per. Terli prov. Sanae. — Augusto.

Sehr variabel in allen Theilen. ähnlich d. S. nepalense Don. unterschieden durch gedrängte Ähre, Sep. ungleichseitig. halb umgekehrt eiförmig, stumpf mit kleiner seitlichen Spitze, die Lippen d. ovarium sind drüsenhaarig.

Satyrium brachypetalum. A. R.
Richard Tentam. fl. Abyss.
T. 90.

A. Rich. Tentam. fl. Abyss. II. 299. t. 90.

Satyrium brachypetalum A. Rich. l.c.
Caule floripero l'vagin. foliac. lax. acut. obtecto.
Spica dens. bracteat. floib. parp.; bract. flores
aequantib. aut superantib. basi erect. caducum
reflex. Lab. galeato dorso carinato apice longe
acuminato antice usque ad mediam partem
tantum aperto. inde sepal. extern. internisque
ex parte media aperturae labelli enatis. in
margine ciliat. Caliarib. ovar. aequantibus
apice acut. Sep. lateralib. extern. semiobovatis.
acutat. internemis & internis angust. obtusiss.
Stigmatis labio superiore erecto. emarginato
ovarii ossis glandulosp-pubescentis.

In loc. herbos. & montos. prov. Chiré.

Habitus fast ähnlich d. S. coriophoroid.
Bei S. brachyped. ist das Lab. spitz & nur ganz kürzeste
geöffnet (nicht bis zur Basis) Hierdurch gewinnt es
den Anschein, als ob die 5 aud. Perigabl. auf der
halben Höhe des Ausser Vorderandes des Lab. entspringen
& nicht an d. Basis wie bei S. coriophoroid.
Ausserdem sind alle Perigabl. dreiseitig gewimpert. die
Sporne sind länger als in S. coriophoroid & spitz.

Satyrium Schimperi. Hochst.
A. Rich. Tentam. fl. Abyss. T. 91.

(Der Blüthenstand ist etwas zu lang. Die Internodien sind gewöhnlich etwas kürzer.)

A. Rich. Fent. fl. Abyss. II 300. t. 91.

Satyrium Schimperi. Hochst. pl. Schimp sect II. 1185.

Caule flexuoso foliosc. palmari. 1 aus 1½' fol. saep. 2 ovali-acuis. vagin. laxe saep. 2 acut. decrescentib. Spica laxa diffanthiflora, oligantha - Bract. obl. lanc. acut. parte superiore reflex. Lab. galeat. obl. antice ovato-lato & margine subexpansa concava apice subacuta, terminato in certa parte superiore sanktum apertd. Sep. inde superiorem partem fauris anticae occupantib. Lateralib. arcuat. latiorib. semiovalib. acut. supremos & interius brevib. angust. oblongis. adiacrib. ovario coeviorib.

In graminos. & mont. passr. Chiré prop. Mai-jun-jul - Sept. & prop. Entschedkab. prov. Semièn - August.

Variirt je nach der Höhe der Standorte in d. Größe. Der blattragende Schaft trägt gleichzeit. Bl. die Blüthen einzeln. sind gering an Zahl & bilden eine schlaffe Aehre statt der gedrängten. der andren Satyrien. Das Lab. ist verlängert u. nur am oberen Drittheil offen. die Öffnung hat einen hervorspringend. hohen Rand. Dieser ist ein wenig gewölbt & nach der Spitze zu etwas erweitert. Die übrigen Perigonbl. sind sehr klein u. entspringen aus dem oberen Drittheil der Vorderseite des Labellum.

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35(2)(1)

318

1537 Lisa. Berg.

H.Bolus. del. 21. 12. 84. Hanhart imp.

Monadenia (DISA) RETICULATA, *Bolus.*

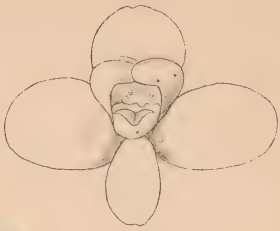
Bolus. del. a. n. 84.

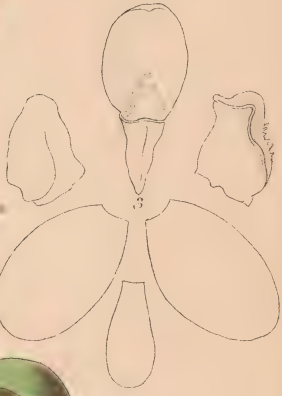
Henhart imp

Monadenia (DISA) PYGMÆA, *Bolus.*

Fitch del 27.10.84 Hanhart imp.

DISA FASCIATA. LINDLEY.

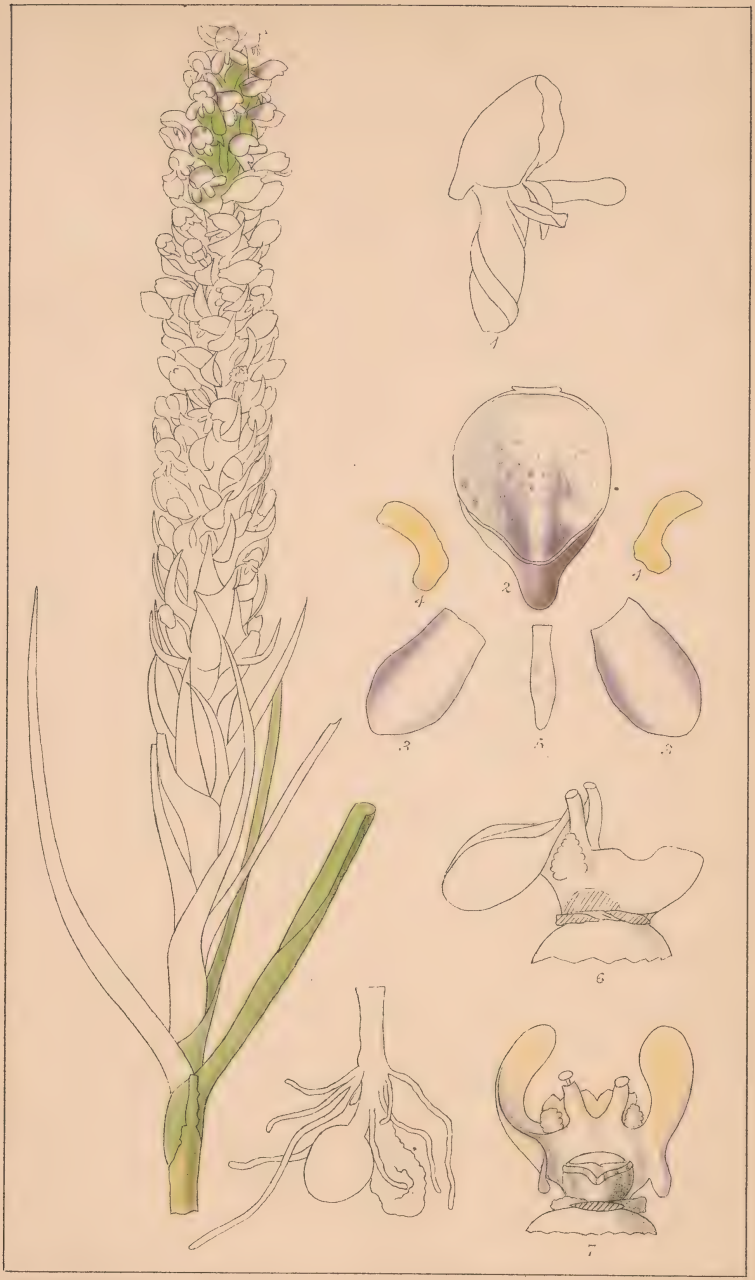




Hasselt del. et lith. 1884. ex vivo .

Rombart imp.

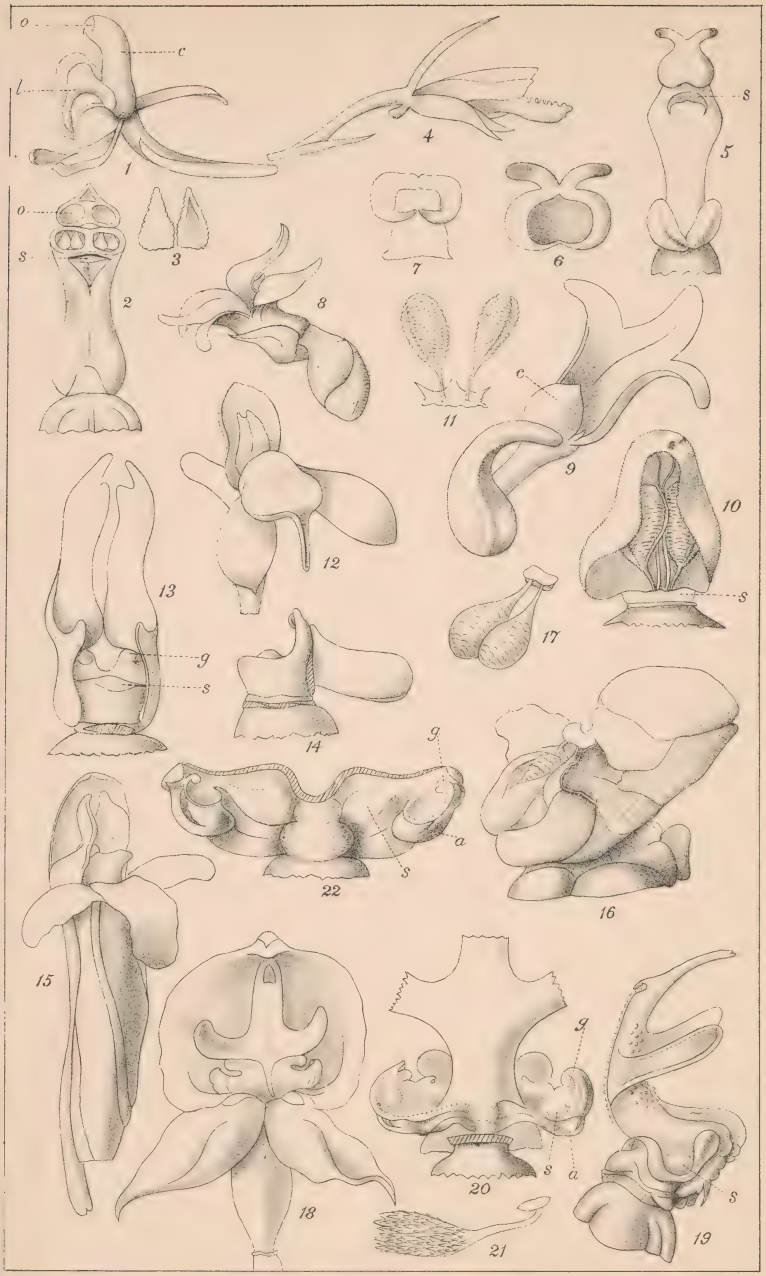
DISA GLANDULOSA . BURCHELL .



William Sowerby del. et lith.

Harrison imp.

DISA OBTUSA. *LINDLEY.*



Hobus del 1885. Hanhart imp.

SOUTH AFRICAN ORCHIDEÆ.

H.Bolus. del. 13. 9ber 85

Hanhart imp

DISA LINEATA, *Bolus.*

H.Bolus. del. s. 12 Sa.

Hanhart imp

DISA TABULARIS, *SOND.*

H.Bolus, del. 21.10.84

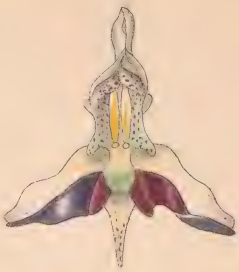
Hanhart. imp.

DISA TENUICORNIS, *BOLUS.*

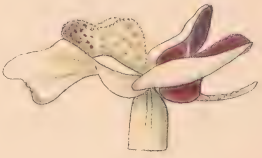
H.Bolus, del. 9.11.'84

Hanhart imp.

DISA BODKINI, *BOLUS*.



1



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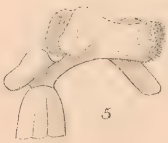


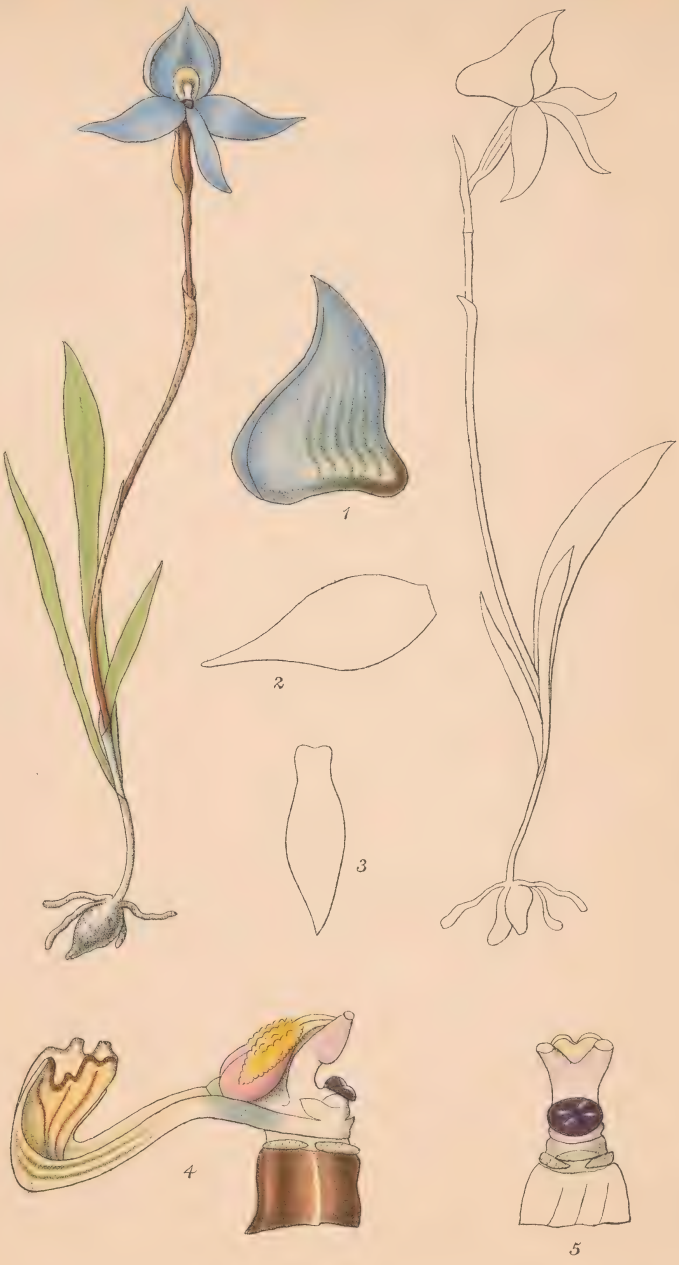
5

6

Bolus del. et lith.

Panhard imp.

DISA ATRICAPILLA, *Bolus*.



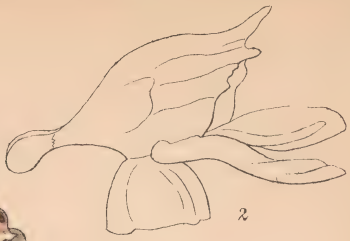
HBolus del. 1.11'82.

Hanhart imp.

DISA MACULATA, *LINN. F.*

HBolus del. 27.12.'83. Hanhart imp.

DISA LONGICORNIS, *THUNB.*



H.Bolus del. 4. 12. '82.

Hanhart imp.

DISA OCELLATA, *BOLUS*.

Chromotyp. Emil Lauc, Berlin S.

Disa kewensis (grandiflora × tripetaloides) a ⅔, b nat. Gr. von G. Bornemann, Blankenburg a/H.

Disa kewensis (grandiflora × tripetaloides)

von G. Bornemann, Blankenburg am Harz.

(Hierzu Tafel 1510.)

Im Jahre 1901 hatte ich die Freude, Disa langleyensis und Disa Veitchii, zwei Hybriden, bei mir blühen zu sehen und konnte den Lesern der Gartenflora diese im Jahrgang 1902 Seite 113 Tafel 1496 im Bilde vorführen. Meinem Versprechen, auch die dritte Hybride, welche ich in Kultur habe, nämlich Disa kewensis, für die Gartenflora mit dem Pinsel festhalten zu lassen, sobald sie blühe, konnte ich schon im vergangenen Jahre nachkommen (siehe Gartenflora 1902 Seite 411).

Wie schon der Name angiebt, wurde diese Kreuzung im botanischen Garten zu Kew bei London erzielt. Die Mutter ist die herrliche Disa grandiflora, die ihre grossen Blüten leider nur in geringer Anzahl, meist zu zweien am Schafte, hervorbringt. Vom Vater, D. tripetaloides, hat Disa kewensis die Reichblütigkeit ererbt, sie vereinigt meist 8 Blumen an einem Blütenstand, ähnlich wie Disa Veitchii. In der Grösse der einzelnen Blumen hält Disa kewensis die Mitte zwischen den Eltern. Die Färbung der beiden unteren Kelchblätter ist ein ganz reines, kräftiges Rosa, während das dritte Kelchblatt, der perlweisse Helm, innen dicht rosa punktiert ist. Die Blumenblätter selbst sind bei D. grandiflora und ihren Verwandten sehr klein.

An diesen ebenso schönen wie interessanten Erd-Orchideen muss jeder Pflanzenliebhaber seine Freude haben. Infolge falscher Kultur sind sie leider recht selten geworden und die vielen Misserfolge haben vor weiteren Versuchen abgeschreckt. Dennoch ist die Kultur eine ziemlich einfache und erfolgreiche. Man muss nur darauf sehen, dass die Pflanzen auch während des Winters einen kühlen, luftigen und recht hellen Standort erhalten, im Winter bei etwa 8° R. (10° C.). Während der Ruhezeit im September und Oktober wird nur sehr mässig gegossen, während der Zeit des stärksten Wachstums, die in den zeitigen Frühling fällt, recht reichlich. Die Erdmischung muss locker und leicht und ein guter Wasserabzug vorhanden sein. Die Disa setzen bei künstlicher Befruchtung leicht Samen an und der Erziehung wertvoller Hybriden steht hier ein weites Feld offen.

Über Pinus nigra var. austriaca forma falcata*),

eine neue Form aus dem Göpperthain bei Breslau.

Nadeln 8—15 cm lang, *stark sichelförmig* und meist auch *gedreht*, mit *deutlich aufgesetzter*, gelblicher, *stechender* Spitze, dunkel- bis schwärzlichgrün (im Winter) und hellgrün im Spätsommer.

Zapfen 6—7 cm lang und bis *32 mm dick*, (am 2. September) meist glänzend grün und oft *sichelförmig* zur Seite gebogen; — Querleisten der Schuppenschilder (Apophysen) *stark, scharf hervortretend, bis 15 mm breit;* Nabel der Apophysen dunkelbraun und *der oberen stets mit einem scharfen Spitzchen;* Oberfeld der oberen Apophysen *meist flach* oder doch wenig gebogen, in der *Mitte mit Ausbuchtung, in welcher sich eine kleine Erhebung findet.*

Standort: Breslau, in den König Wilhelm-Anlagen des Göpperthaines, dem Eingang des zoologischen Gartens gegenüber (in der Nähe der Diana); nur in 3 Exemplaren von etwa 10 m Höhe und 29, resp. 22 und 18 cm im Durchmesser, 1 m hoch vom Erdboden gemessen. Zapfen erst 1902 vom stärksten, dem zoologischen Garten am nächsten stehenden Baume beobachtet. — Letzterer zeigt den Charakter der neuen Form am auffallendsten; er erhält durch die sichelförmig gebogenen Nadeln einen krausen Habitus der Krone. Bei den beiden anderen Bäumen tritt dieses Aussehen weniger hervor, was vielleicht durch den etwas beengten Standort bedingt wird. Nur einen Uebergang zu dieser Falcata-Form fand ich in der Nähe des Göppertberges.

Auf meinen Reisen (1897 und 1898) durch Dalmatien, Herzegowina und Bosnien, — dem wichtigsten Verbreitungsbezirk der Pinus nigra Arnold, — habe ich diese auffallende Form ebensowenig beobachtet wie auch 1902 in den Neuanpflanzungen auf Lussin piccolo, der schönen Insel, südöstlich von Pola gelegen. — In der mir zugänglichen Litteratur**) finden sich keine Angaben über sichelförmige Nadeln und Zapfen der Schwarzföhre. Auch Dr. Tscherning in Wien bestätigt das, denn er hat die typische forma falcata weder bei Mödling, dem klassischen Standort Host's, noch sonstwo in Nieder-Oesterreich beobachtet; nur an den Festungswällen von Ulm und in Schönbusch in Württemberg sah Dr. Tscherning kultivierte Exemplare, welche einige Annäherung an die neue Form zeigen.

Ob sich Pinus nigra Arnold var austriaca Höss f. falcata durch den Samen fortpflanzen lässt, werden die Kulturversuche zeigen. — Was die Bildung der neuen Form in der Kultur veranlasst hat, lässt sich vorläufig ebenso wenig erklären, wie auch die Thatsache, dass unter den Hunderten von angepflanzten Schwarzföhren im Göpperthaine und

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*) Pinus nigra Arnold, 1785, Syn. P. maritima Mill., 1768, = P. Laricio Poir., 1804, = P. nigricans Host, 1826, = P. nigra Link, 1827.

**) Ascherson-Graebner, Synopsis der mitteleuropäischen Flora, I. S. 212, — Beck, Flora von Nieder-Oesterreich, Südbosnien und der angrenzenden Herzegowina, S. 5, — Beissner, Handbuch der Nadelholzkunde, S. 241 etc. etc.

1. 2. Disa longlegensis (racemosa × tripetaloides). 1 in ½, 2 in nat. Gr.
3. 4. Disa Vätchii (grandiflora × racemosa) von G. Bornemann, Blankenburg a/Harz. 3 in ⅓, 4 in nat. Gr.

1113

Disa-Hybriden.

Von G. Bornemann, Gärtnereibesitzer, Blankenburg a. Harz.

(Hierzu Tafel 1496.)

Von den vielen Disa-Arten ist eigentlich nur die schönste und grossblumigste, die rosig-zinnoberrot blühende Disa grandiflora, in weiteren Kreisen bekannt geworden, und auch ihr begegnet man selten in den Orchideensammlungen, da sie, wie alle Disa-Arten, obgleich sonst nicht schwer zu kultivieren, viel Licht und Luft verlangt und die Lüftungsvorrichtungen in den Orchideenhäusern für die Kultur dieser schönen Erdorchideen meist nicht genügen.

Die Anzahl der Disa-Hybriden ist daher eine sehr geringe und meines Wissens giebt es deren nur drei, nämlich:

Disa kewensis (D. grandiflora × D. tripetaloides)
Disa langleyensis (D. racemosa × D. tripetaloides)
Disa Veitchii (D. grandiflora × D. racemosa).

Die beiden letzteren blühten im Jahre 1901 in meiner Gärtnerei und wurden von meiner Frau in beiliegender Farbentafel wiedergegeben. Das Blattwerk beider erinnert an das von Dianthus barbatus und ist bei D. langleyensis bläulich-grün, bei D. Veitchii hellgrün und grösser. Die kleine karminpurpurne Blume der ersteren ist nur von botanischem Interesse; da der Blütenstand aber 9—12 Blumen trägt, die Pflanze leicht wächst, willig blüht und leicht Samen bringt, so würde Disa langleyensis ebenso wie ihre Stammart racemosa ein gutes Material zur Erzielung reich- und leichtblühender Hybriden liefern.

Bei Disa Veitchii sind die Blumen schon recht ansehnlich und fallen namentlich durch die prächtige Färbung auf. Die unteren Blumenblätter sind leuchtend magenta-karmin, während das hutförmige obere Blumenblatt rosig perlweiss und karmin getuscht ist. Der Blütenstand wird von 4—6 Blumen gebildet.

Für den Orchideen-Liebhaber sind die Disa-Arten und Hybriden durch die ganz eigenartige Form der Blumen wie durch die aussergewöhnlich lange Dauer derselben wertvoll. Die Blumen halten sich mehrere Wochen lang und würden als vorzügliches Schnittmaterial auch von handelsgärtnerischem Werte sein, wenn es gelänge, reichblühende und grossblumige Hybriden zu erzielen. Dass dies möglich ist, zeigt Disa Veitchii. Die Blütezeit fällt in den Mai, zu welcher Zeit feine Schnittblumen noch wertvoll sind.

Die Elektrizität im Gartenbau mit besonderer Berücksichtigung der elektrischen Heizung.

Vortrag, gehalten im Verein z. B. d. G. in Berlin am 19. Dezember 1901.

Von Franz Bluth, Gross-Lichterfelde.

Wenn ich hier einen Vortrag übernommen habe, so wollte ich eigentlich nichts weiter als meine Erfahrungen auf dem Gebiete der Elektrizität mitteilen, muss aber bezüglich der elektrischen Heizung gleich vorweg bemerken, dass es richtiger gewesen wäre, mit dem Bericht darüber noch etwas zu warten, denn die Sache ist noch nicht abgeschlossen, und Probieren geht über Studieren. Oft aber ist es nötig, dass man erst studiert und dann probiert. Die Regieruug befürchtet, dass die Gärtner zu viel Kapital in ihre Gärtnerei stecken; das mag in einzelnen Fällen richtig sein, im allgemeinen muss aber auch der praktische Gärtner Versuche machen, wenn er nicht zurückbleiben will, und bezüglich seiner Gewächshaus-Einrichtungen muss er sein eigener Schmied, Maurer und Heiztechniker sein. Die Wissenschaft der Heiztechnik lässt manche praktische Sachen aus dem Auge, und ich bin überzeugt, dass das bei der elektrischen Heizung auch so gehen wird.

Bezüglich der Anwendung der Elektrizität erinnere ich daran, dass zuerst auf der Berliner Gewerbeausstellung 1879 uns von Siemens & Halske ein elektrischer Strassenbahnwagen vorgeführt wurde, noch ganz primitiv. Für 10 Pfennige konnte man da ein kleines Stückchen fahren, jetzt fährt man für dasselbe Geld durch ganz Berlin.

Damals fingen die Gärtner auch an, den Einfluss des elektrischen Lichts auf die Pflanzen zu verfolgen; aber die Sache hatte mehr ein wissenschaftliches Interesse als ein praktisches; denn ob z. B. Erdbeeren bei elektrischer Beleuchtung 24—36 Stunden eher reifen als nicht belichtete, ist für die Praxis ziemlich wertlos.

Man hat auch sonstige interessante Versuche mit elektrischem Licht an Pflanzen ausgeführt, die wissenschaftlich von hohem Interesse sind; man hat ferner versucht, elektrische Ströme in die Erde zu leiten, um die Nährstoffe leichter löslich zu machen, event. die Pflanzenwurzeln selber zu grösserer Thätigkeit anzuregen. (Es ist ürigens nicht unmöglich, dass, wenn wir ein Dungbeet herstellen, nicht blos die Wärme direkt wirkt, sondern die Wärme die Stoffe leichter zersetzt.)

Das elektrische Licht für Gewächshäuser wandte im grossen zuerst Emil Liebig in Dresden an, der seine Gärtnerei elektrisch erleuchten liess, was damals noch eine kostspielige Sache war. Heute wäre wohl zu überlegen, ob man seinem Beispiel nicht mehr folgen sollte. Unser Arbeitslohn wird teurer, unsere gärtnerischen Leistungen müssen besser bezahlt werden, wenn wir überhaupt noch in Gärtnereien arbeiten sollen. Da fragt es sich, ob man nicht auch die Zeit besser ausnutzen kann und bei trüben Tagen oder im Winter, wo jetzt so früh Feierabend gemacht werden muss, noch einige Stunden bei elektrischer Beleuchtung arbeiten könnte. Es giebt eine Menge Arbeiten, die sich sehr gut dabei ausführen lassen. Seidel, sowie Helbig in Dresden sind bereits damit

M.S. del. J.N. Fitch lith.

Vincent Brooks, Day & Son Imp.

L. Reeve & Co. London

Disa bipedalcalcar. H. f. Bows

M.S. del. J.N. Fitch, lith.

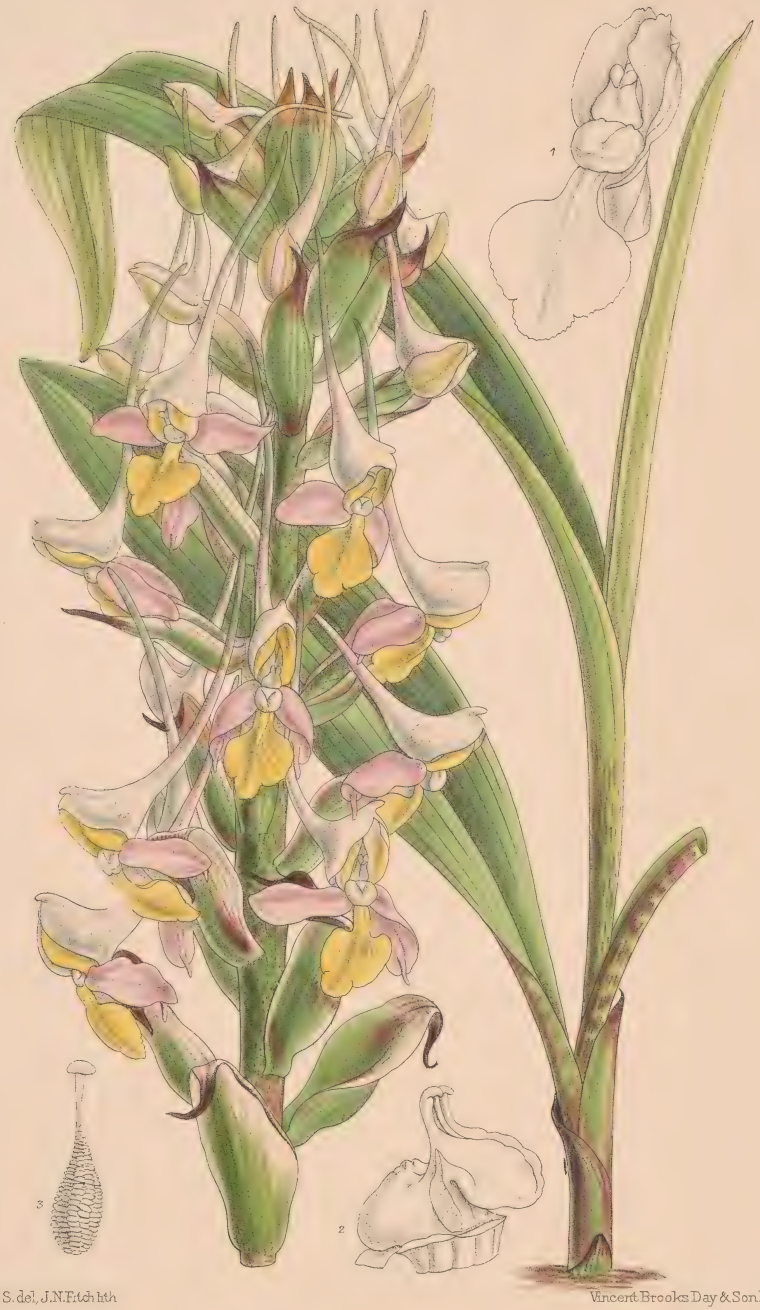
Vincent Brooks, Day & Son, Imp.

L. Reeve & Co. London.

Dina incarnata Lindl.

Bot. Mag. tab. 7256

Disa Cooperi Hf.
Flora 41. (1881) 328.



M. S. del. J.N.Fitch lith

Vincent Brooks Day & Son Imp.

L. Reeve & Co. London.

Bifrenaria Harrisoniae. Rchb. f.

Disa cornuta. Swartz.

Cap.

Disa pulchella. Kotschy.
A. Rich. Tentam fl. Abyss. T. 93.

DISA GRANDIFLORA. (VAR. SUPERBA & BARRELLI?)

Flore des serres. II. 160

Disa grandiflora. L. f.
Cap d. g. H.

Bot. Mag. 7021.

Disa racemosa
L. f.
of. Bolus.

Journal of science &c. 5. 1.

S. porrigines

(Disa porrecta. Swartz)

Cap.

Tab 6532.

Dyssa polygonoides Lestib. gen. & sp. p. 349

(Micranthes.)

Elata, sobaspa, caule foliosi. Fol. lineari v. ligulato-lanc. longe acuminat. planiusc. 5-nerviis, superiorib. abbreviat. reginae formib. erat. caulem appress. Spica densa ovoidea v. cylindrac. Rhach. obl. lanc. floribus aurantiac. bresiorib. v. paulo longior. rb. sep. superiore exacto oblongo dorso basi basi in calcar breve descendens producto. sep. lateralib. late ovalis apice rotundat. pet. parv. exactis lin. obl. obtus. apicul. incurv. Labello lin. oblap. antheris angustis.

Bot. Mag. 6532.

Disa polygonoides. Lindl.

Bot. Mag. 7066.

Disa Cacera Swartz
var. multifida. N. E. Brown
Gard. Chron. 1888. II. 664.

Tab. 6529

crassicornis Lindl

Disa (megaceras Hook.)

(Repandra)

Elata, robusta, caule foliosa. Fol. acuminat., spica multiflora, bract. lanc. longe acuminat. ♂ floris (floribus?) crassiusc. v. longiusc. Flor. c. magn. alb. purp. maculat. galea postica conica in cornu pollicare recurva v. leuke curvata semi protracta. Sep. decurv. obl-lanc. apiculat. pet. late oblique ovat. recurv. acut. labello angust. lingulato glabro apice acuto recurvo v. revoluto, anthera supina ovalis elongatis fere rectis.

Disa macrantha Hook.

Bot. Mag. 6529.

Orassicornis Lindl.
Disa (megaspidas . Leeor.)

Disa spathulata. Swartz.
Cap.

Disa spatulata. Sw.
Cap.

Bot. Mag. 6891.

Disa atropurpurea. Sonder. Linnæa.
XIX. 1847. 96.

Journal. Lin. soc. VII. 1864. p. 175.

Roland Trimen on the fertiliz. of D. grandiflo.

Disa grandiflora. Lin

p. Pollinium.
d. Disc of pollin.
c. caudicle of pollin.
S. Stigma.
L. Labellum.

u.p. upper petals.
u.s. upper sepal with nectary.
l.s. lower sepals.
g. gateway or passage leading to the nectary below. the upper pet. of the column.

Disa rousellifera. A.R.
Richard. Tentam. Fl. Abyss. T. 97.

M.S. del, J.N. Fitch lith. Vincent Brooks, Day & Son Imp

L. Reeve & Co. London.

Disa sagittalis Sw.
Linn. Obs. 350.

3 c

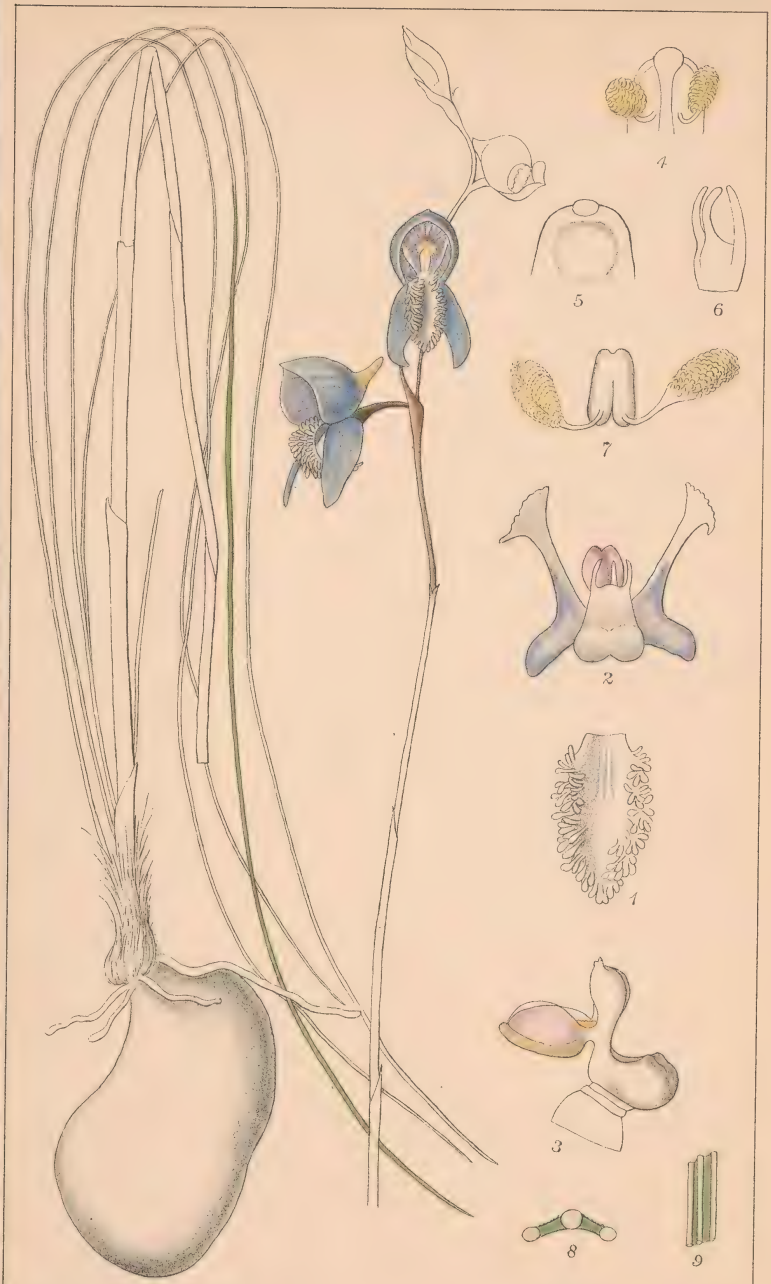
319

153 ½. Herschelia. Lindl.

Bolus del. 8.10.'82.

Hanhart imp.

DISA BARBATA, *SWARTZ*.



Bolus del. Oct. 1880.

Hanhart imp.

DISA (§Herschelia) VENUSTA, *Bolus*.

Lindley. gen. & sp. p. 362.

Herschelia.

Perianthium patens. Sepalum supremum galeatum, inflatum, dorso calcaratum, lateralibus magis. Petala sub galea abbreviata, carnosa collateralia, basi auriculata. apice delabriformia, columna duplo longiora Labell. oblong. omnorum integerrimum. Columna nana. 2partita / Stigmate antherasque sejunctis / Stigma carnosum, elevatum, oblongum, basi labelli situm. Rostellum 3partitum, lateribus lateral. angustioribus. acuminatis appendice dorsali, lineari; Theca, oblonga, subcurvata, cum antheram vix. Anthera horizontalis, loculis parallelis, abbreviatis glandulis 2 maximis truncatis carneis denticulis. — Herba caespitosa radicibus. tuberiformibus. Folia radicea. Flores pauci, magni, spectosi. H. coelestis. — Sin graminifolia. Her. Caulis gracilis. 1½ pedalis, squamis 2-3 acutis amplexicaulibus vaginatis. Folia radicea. Racemus 4-6-florus. Flores magni in cruce coerulei labello oblongo basi pallido supra medium purpurascente. Galea inflata, subrotunda calcare brevi obtuso arcuato supra basin.

Hab. ad prom. Bon. Sp. Masson. Burchell. n°
7801. 7372 in rabuletis inter plantas parvas
rariusculeasque duras Cuduianas. Herbert.

(= Disa graminifolia. Ker.)

Cap.

Herschelia coelestis. Lindl.

322

„Brown Coal Haus

M. S. del. J.N. Fitch lith.

Vincent Brooks, Day & Son Imp.

L. Reeve & Co. London.

Bromheadia coccinea

Harvey. Thesaur. cap. II. tab. 104.

Brownlecа recurvata. Sonder.

Harvey. Thesaur. cap. II. tab. 103.

Brownlea caerulea. Harv.

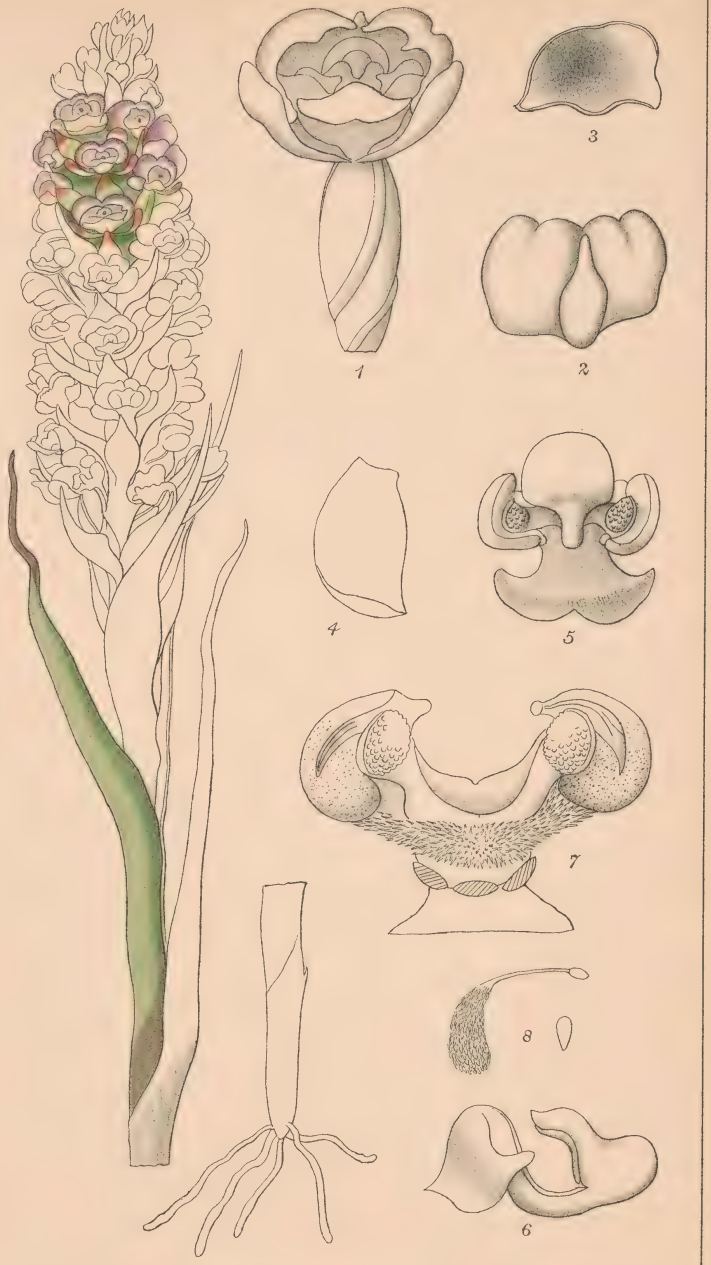
324

153 & 6 Brachycorythis Lindl

2 c

327

1539. Pterygodicum. Swartz.



H.Bolus del. 30.11.'82. Hanhart imp.

PTERYGODIUM CARNOSUM, *LINDL.*

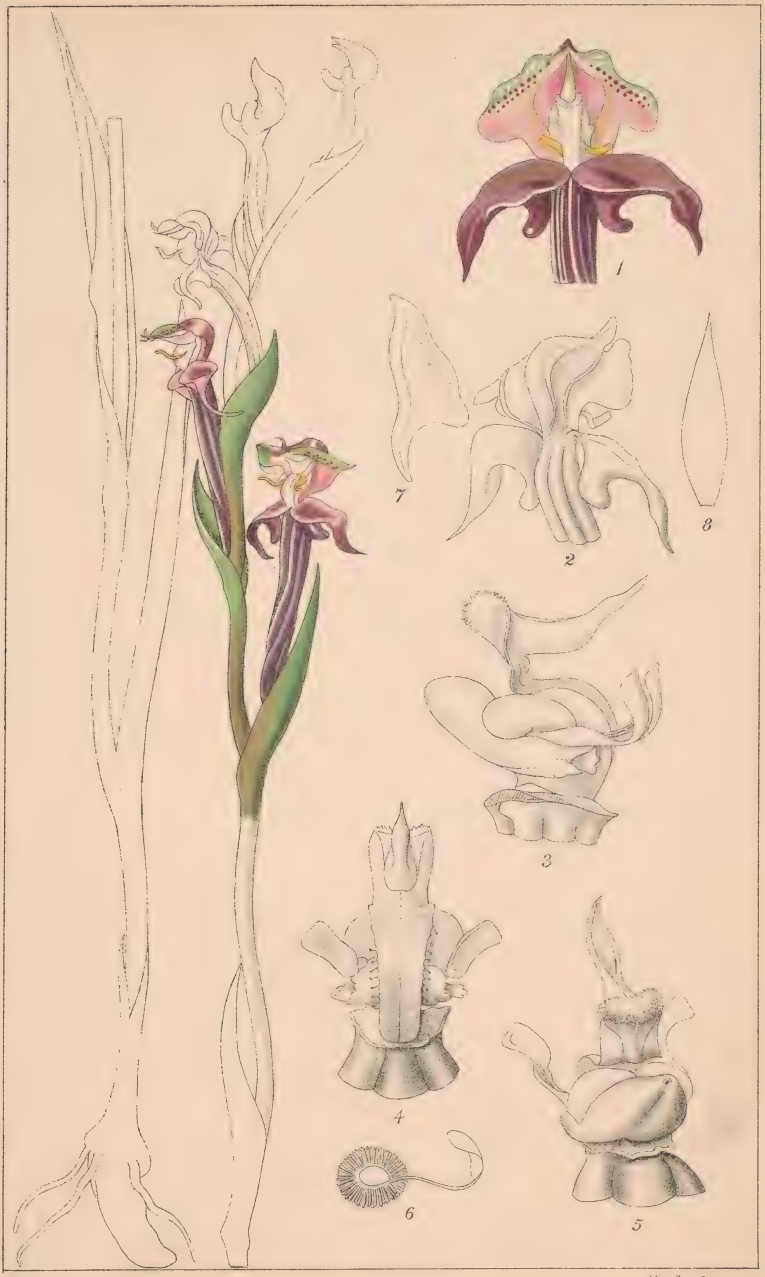
Journal of science & the arts. VI. 1

Pterygodium catholicum
Sw.
Cap.

6c

328

1543 Lisperis. Swartz.

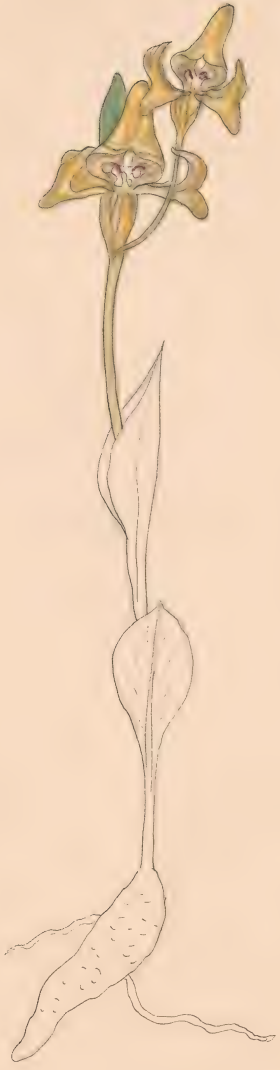


Bolus. del. 30.11.'84. Hanhart. imp.

DISPERIS PALUDOSA. HARV.

Bolus del. et lith. Hanhart imp.

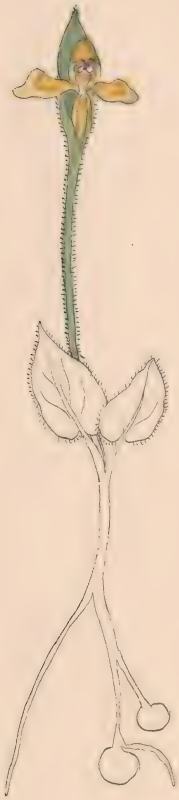
DISPERIS SECUNDA, SWARTZ.



< Disperis ovoullata. Sw.
Cap.

Disperis capensis Swartz.
(Disa porrecta Swartz.)
Cap.

Disperis secunda. Swartz.
Cap.



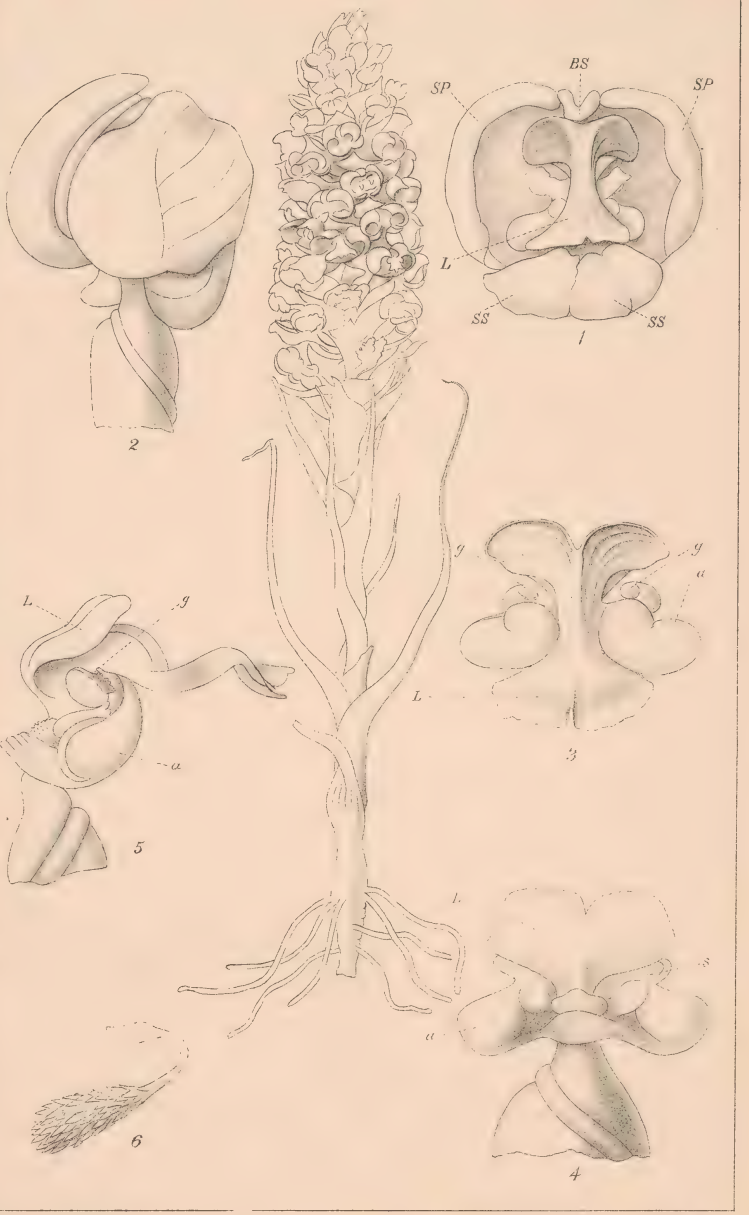
Disperis villosa Sw.
Cap.

1544. Papacies

413c)

329

1540. Corycium. sw.



Bolus, del. 22.11.'82. Hanhart, imp.

CORYCIUM EXCISUM, *LINDL.*

45.

Corycium orobanchoides.

Corycium. Swartz. Perianthium ringens, Sepala basi aequalia, erecta, lateralia connata. Petala libera, connata. Labellum unguiculatum, cum columnae facie connatum, antice appendiculatum. Antherae dorsales, resupinatae loculis ungue arcuato labelli interpositis sejunctis. Glandulae nudae.

C. orobanchoides Swartz in act. holm. 1800 p. 220.
Thunberg. fl. cap. ed Schultes I. 20.
Ker. in Roscoes Journal vol 8 t. 3 fig 3 ??
Corycium orobanchoides. Linn. suppl. 402.

Sepalum supremum lineare, angustum, acutum, inter petala recurvata, flavescentia, apice purpurea rotundata interpositum; inferius paulo latius. oblongum concavum, arcuatum, bidentatum, dentibus sanguineis. Labelli appendix (lobus intermedius) alba, bifida, cuneata, bibba, laciniis patentibus rotundatis; lobi laterales erecti, virides angulis lanceolati, furcam referentes, petalis breviores. Antherae lobi purpurei, oblongi, breves, per totum unguis adnati labelli interpositi latitudinem sejuncti, inversi; connectivo hippocrepico carnoso subincurvo. Pollinia granulosa, sectilia; glandulis nudis in apice loborum lateralium rostelli insertus parvulis. Ovarium oblongum, 3 gonum, lobo medio connectivo

forma cuneiformi compressa, lateralibus linearibus obtusis divergentibus.

Floret mensibus Septembri et Octobri. Caput Bon. Spei.

It agrees pretty well with the species described by Thunberg under this name, but not entirely: for that author speaks the upper sepal being somewhat reflexed at the end, and of a plant a foot high. It is therefore possible that 2 species nearly allied to each other exist at the Cape of G. H. and that while this fig. represents one of them, the Barbarossa drawing in Banks's journal, as above quoted, may have been intended for the other.

Fig 1. Flower seen in profile.
Fig 2. Front view of the same, the petals & upper sepal just visible at the base. having been cut off. the principal part of the fig. represents the lip, with the point of the lower double sepal just visible at the base.
Fig 3. The column in profile with the lip adhering to it, and 1 lobe of the purple anther.
Fig 4. Front view of the column, the lip having been cut off as it is shewn by the scar represented at the upper edge; the masses of the pollen masses are seen lying in the cavities of the rostellum.
Fig 5. Sketch of a pollen mass shewing the rostellum & pulled out of the anther.
Fig 6. The same parts seen in a different direction with the pollen in its cell.

Corycium orobanchoides. Sw.
Cap.

Bauer & Lindl. Illustrat. Genera T. XV.

D. Corycium bicolor. Sw.

Journal of science & the arts. I. p. 104.

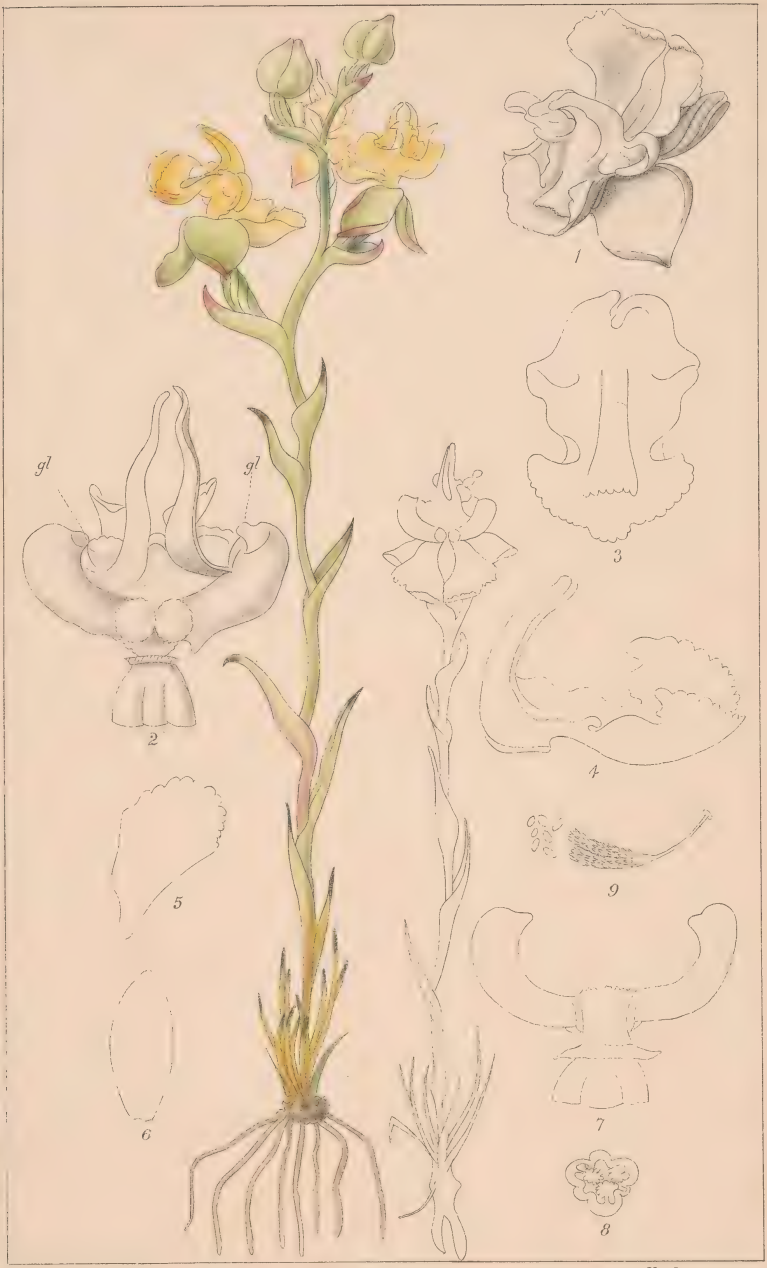
Corycium bicolor.

This genus is very distinct from the rest of its co-ordinates, in having a 4-parted corolla. The insertion of the label near the top of the column & of the 2 small winglike leaflets hanging down at its sides as the back of the anther, afford the appearance of an inverted flower. The wings or leaflets the interior segments of the corolla.

C. bicolor. Swartz in act. holm. 1800. p. 122
Idem Schrader Neues Journal I. 43. Willd. Sp. pl. V. 61.
Ophrys bicolor. Thunberg prodr. 2.

Corycium bicolor. Sw.
Cap.

330
Orolando
Ecrit



Bolus, del. 20.12.'84.

Hanhart, imp.

CERATANDRA BICOLOR, *SOND.*

38/26 c)

331.

1618. Cypripedium. L.

Blüte & Blatt von C. Ash. burtonioides. No. 1 Sep. dors. expansum No. 2 Staminodium derselben Art.

No. 3 Sep dors. exp. } von C. Ash.
No. 4. Staminod. } burtoniae.

Cypripedium Ashburtonioides Kränzlin
Soll entstanden sein aus C. Spiceranum ♀ × Harrisian. major ♂. Gezogen bei Thompson & Son. Erhalten von R. H. Measures Esq. Streatham. Sept. 24. 91.

CYPRIPEDIUM
VI.

T. Smith Del.

Weddell S.

Cypr. arietinum R. Br

Jeanne Kook.

CYPRIPEDIUM BARTETI - CYPRIPEDIUM LAFORCADEI.

Aroms: P. Stroobant, Gand

CYPRIPEDIUM
VIII.

Cypr barbatum Lindl.

CYPRIPEDIUM *Lin.*

Frauenschuh.

Syst. nat. Class. Monocotyledoneae Fam. Orchideae Trib. Cypripedinae.
Syst. Lin. Class. XX. Ord. I. *Gynandria Monandria.*
Bartl. Ord. pl. p. 56. *Kunth.* Handb. p. 287.
Lindl. Einl. p. 384.

CHAR. GEN.

Flores pedunculati, subsolitarii, terminales.

Perianthii laciniae patentissimae coloratae; exteriores duae oppositae, superiori latiori et quinquenervi, inferiori binervi e foliolis duobus connatis formata; laciniae duae laterales interiores exterioribus similes sed angustiores; labellum maximum, inflatum, calceoliforme, basi muticum. Gynostemium breviusculum, cernuum apice trifidum, divisuris lateralibus brevioribus subtus antheriferis, media (staminodium) maxima clypeata, carinata et sterili, stigma supra tegente*). Antherae loculi discreti, subbivalves. Pollen granulosum, demum ceraceum et subliquescens (pulticeo-granulosum R.). Rostellum et proscolla nulla. Pars stylina incrassata; Stigma magnum, subdeltoideum, antheris interiectum et staminodio tectum. Germen non contortum, oblongum, costatum, uniloculare, multiovulatum, ovu-

*) Lacinia haec antherae Orchidearum communium respondet quae, ubi evolutione typica suppressa interiit, stamina lateralia evolvuntur, ubi autem haec anthera intermedia praepollet, laterales, ut in omnibus reliquis generibus nostris, in staminodia convertuntur.

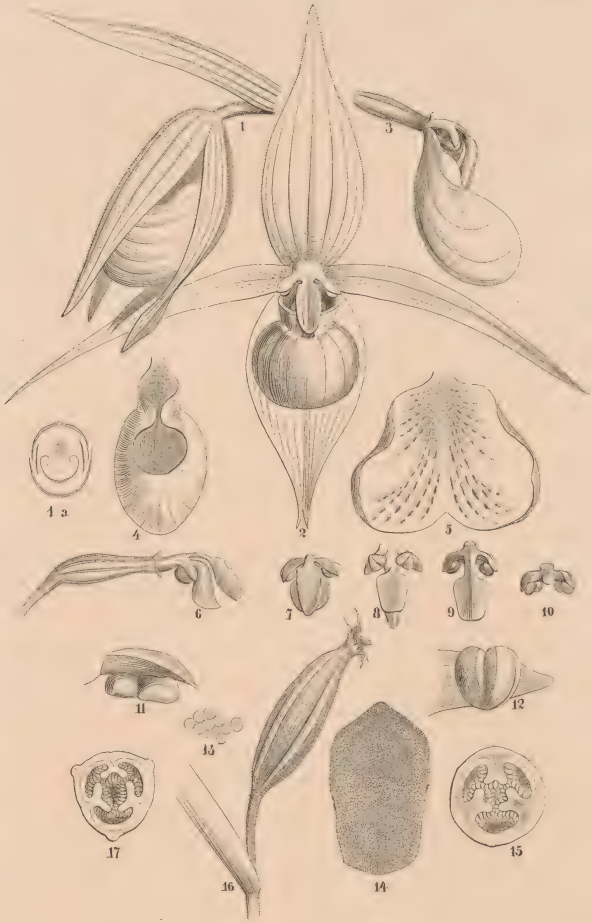
lis spermophoris tribus parietalibus affixis. Fructus et semina ut in Limodorinis.

Plantae herbaceae, zonae temperatae utriusque hemisphaerae incolae; caules foliosi; flores magni, speciosi; radices fibrosae. In Germania unica species hic delineata occurrit.

Lin. Gen. pl. ed. Schr. n. 1376.
» » » ed. Spr. n. 3418.

EXPLICATIO FIGURARUM.

1. Flos *Cypripedii Calceoli* L. sub anthesi del. magn. nat.
1a. Praefloratio.
2. Flos apertus, a fronte visus.
3. Germen cum gynostemio et labello.
4. Labellum calceoliforme, a fronte visum.
5. Idem, fissum et expansum.
6. Germen cum gynostemio, a latere visum.
7. Gynostemium cum staminodio terminali, a vertice visum.
8. Idem, a facie inferiori del.
9. Idem, sublato staminodio.
10. Gynostemii divisurae laterales fertiles, abscissis reliquis partibus.
11. Divisura (s. filamentum) antherifera, magn. aucta et a latere del.
12. Eadem, a facie inferiori visa.
13. Pollen.
14. Stigma papillosum, magn. auctum.
15. Sectio transversalis germinis.
16. Fructus, magn. nat.
17. Sectio eius transversalis.



CYPRIPEDIUM Lin

M.S. del, J.N. Fitch lith

Vincent Brooks Day & Son Imp.

L. Reeve & Co. London.

Cypripedium × albo-purpureum T. Rey

FIG. 34.—CYPRIPEDIUM CHAMBERLAINIANUM, FROM FRESHLY-OPENED FLOWERS. NATURAL SIZE. COLOURS: WHITE, ROSE, AND PURPLE. (SEE P. 234.)

native of the mountains of Java, at an elevation of from 8,000 to 9,000 feet, and may be serviceable for hybridising purposes.

Hydnophytum Forbesi, t. 7218, is one of those curious plants whose tuberous root-stocks afford a home for ants. The plant does not seem to be injured by the ants, which repay their obligations by keeping off undesirable visitors. The plant in question is cultivated in the Royal Gardens, Kew, where it flowered in 1889 and again in 1891.

Begonia glaucophylla, t. 7219.—A plant of unknown origin—possibly a garden hybrid. In any case, a very beautiful form, with spotted stem, oblong-lanceolate leaves, and pendulous short-jointed clusters of pink flowers. Grown as a basket plant it is very handsome. *Kew.*

Vicia narbonensis, tab. 7220.—The chief interest attaching to this species is that it has been supposed to be the origin of the common field Bean (*Vicia Faba*). Judging from the figure here given, those who indulged in that supposition must have had an extraordinarily vivid imagination, for it is scarcely possible to have imagined two plants of the same genus more different in appearance.

Neo-Benthamia gracilis, t. 7221.—A coloured figure of the very singular terrestrial Orchid, described and figured by Mr. Rolfe in our columns in 1891, vol. x., p. 272. It is a native of Zanzibar.

FORESTRY LECTURES: UNIVERSITY OF EDINBURGH.—The Council of the Royal Scottish Arboricultural Society announce to the members and others interested, that the course of lectures on "Forestry" is about to be resumed in the University by Colonel BAILEY, R.E., a distinguished forest officer. The Council urge landowners, foresters, and all interested in forest education to take advantage of these lectures, which began on the 10th inst. Landowners would do well to send one or more foresters to attend the course, and they would thus derive immediate benefit by the employment of men instructed both in the art and science of forestry. The Council point out the excellent opportunity which these lectures provide to intelligent youths for acquiring a thorough scientific knowledge of their profession. To enable them to take advantage of the lectures, the Council have arranged that young men who desire employment while attending the course can obtain it in the nurseries, or elsewhere, near Edinburgh, on applying by letter to W. J. MOFFAT, Esq., Secretary and Treasurer, 5, St. Andrew Square, Edinburgh.

GHENT HORTICULTURAL MEETING.—Certificates of merit were awarded at the last meeting for the following plants:—1st, Odontoglossum pulcherrimum ×, a new hybrid of the Alexandræ type, shown for the first time; the form is beautifully rounded, the colour white, the edges slightly yellowish, and the entire flower evenly spotted with brown. 2nd, Odontoglossum Holfordianum leopterum, a rare variety with large flowers, the ground golden yellow with large brown spots. 3rd, Masdevallia ignea perfecta, an entirely new variety, imported from Columbia and flowering for the first time; it has never before been shown. The flower is exceedingly beautiful and very large, in colour purplish flushed with dark blue; this is one of the most beautiful forms of ignea. 4th, Masdevallia ignea aurora, another novelty from Columbia, and flowering for the first time; the habit is very distinctive, the colour flame-orange. 5th, Amaryllis flammea ×, a new hybrid remarkable in habit and form, deep red with very fine wavy lines of white. These five fine novelties were from M. CH. VUYLSTEKE, of Loochristy. 6th, a species of Odontoglossum from M. JULES HYE; a magnificent flower, the ground pink, the sepals and petals fringed, bordered with white, the mid-rib whitish, each sepal and petal having a large brownish-red spot surrounded and underlined with smaller spots of the same shade; the lip has a golden-yellow ground, with tiny spots, the edge white, very finely fringed—the flower is robust. 7th, Odontoglossum Pescatorei album, from the same Orchidist, the flowers very fine, pure white, numerous and very fresh. 8th, Odontoglossum sulphureum, also from M. J. HYE, flowers sulphur-yellow and very distinctive, the several parts of the flower have a small circular spot of brownish-red, which is repeated on the lip. 9th, Pteris Wallichianum, from MM. DURIEZ FRÈRES, of Wondelghem, a plant interesting among the many novelties recently introduced. Certificates of Merit were awarded for:—1st, Adiantum venustum, to M. SPAE, Vandermeulen, a very pretty species in vigorous health; 2nd, Nephthytis picturata, from the Congo, to M. L. DESMET DUVIVIER, a dwarf plant, with fine leaves of unusual size; 3rd, to MM. E. VERVAET ET CIE, for Cattleya Masereelii, a white-flowered variety. Honourable Mention was awarded for:—1st, Cattleya Trianæ, to MM. VERVAET ET CIE., the lip very dark in colour; 2nd, Cattleya Trianæ, to the same exhibitors, the lip fringed—very pretty; 3rd, Miltonia vexillaria, to M. ALF. VAN IMSHOOT, flowers large and dark; 4th, Microlepia hirta cristata, to MM. DURIEZ FRÈRES; 5th, Cœlogyne Lemoniana? delicata, to M. J. HYE.

ACREAGE OF FRUIT IN GREAT BRITAIN.—Prominent attention has lately been called to the extending cultivation of fruit in different forms in Great Britain. A relatively large advance is now reported in the *Agricultural Returns of Great Britain* for 1891. The area under small fruits now exceeds that used for Hops, 58,700 acres being returned, compared with 46,200 acres in 1890, and 36,700 acres in 1888, the year when this form of cultivation was first separately recorded. By the introduction of a newly-arranged table this particular area has been more closely analysed than has hitherto been possible, and it will be seen that on 23,416 acres small fruit is grown in plots already returned as orchards—that is doubtless under the larger fruit trees; while 22,510 acres in market gardens, and 12,778 acres of ordinary farm land are now returned as carrying Gooseberries, Strawberries, Currants, and other small fruit. The small fruit area has increased in every county of England and Wales, and in some counties by a remarkable percentage, although nearly a third of the English small fruit area is still to be found in Kent. The changes are not so uniform in Scotland, although there also a larger fruit acreage is reported. The ordinary orchard surface in Great Britain is likewise greater, covering, in round numbers, 210,000 acres. The area, ten years back, was given as under 185,000 acres. A still larger advance appears in the returns of land used by market gardeners for the growth of vegetables, and other garden produce. These were reported as covering 46,604 acres in 1881, while the figures for 1891 make the market garden area 81,368 acres.

TOOPE'S FOG-ELIMINATING PLANT-HOUSE.—As suggested in our issue for November 28, p. 650, when making mention and giving a small illustration of Mr. Toope's invention for mitigating, if not altogether eliminating, the injurious effects of London fog on plants, we have made two visits, and on both occasions have had our previously-formed favourable opinion verified. Situated in the corner of his factory-yard, in one of the foggiest districts in London, viz., Stepney Green, Mr. Toope has erected his experimental house in two divisions. Heated on his own plan, fitted with his chemically-charged air-filters, his charcoal-filters for the water used, and a new and perfect plan of ventilation, it must be said that the plants in the houses, which, it will readily be supposed, could not exist under ordinary circumstances, are in the best health, and progressing well, although the experimenter has fairly enough only begun with small, and, in many cases, weak specimens, Orchids being the plants chiefly grown. The evidence of the production and duration of the flowers is a great point; and both in November and December a good show for so small a collection was found. Last week we found some Cattleya Trianæ in bloom, C. citrina, showing flower strongly; several Dendrobium Wardianum, a fine D. crassinode, Cœlogyne flaccida, Zygopetalum Mackayii, Odontoglossum Rossi majus, with seven blooms; a fine O. maculatum, which, to our certain knowledge, has been in bloom since the middle of December, and in one corner was a small case in which were plants of Anæctochilus petola and Goodyera discolor, besides others. If regarded only as a system of perfect ventilation, the invention is a good one, and deserves a trial by those who try to grow plants in large cities and smoky manufacturing districts.

SHREWSBURY HORTICULTURAL SOCIETY.—At the annual meeting on the 11th inst., the Mayor presiding, a balance-sheet was produced, showing the income of the Society for the past year to have been £3334 10*s.*, as compared with £2963 in 1890—the highest amount ever reached by the Society in one year. The subscriptions for the year amounted to £428 7*s.*, and the receipts at the exhibition in August last were £2796. The amount of prize-money was £428 7*s.* 6*d.*; amusements and fireworks cost £421; bands, £253; and the profits on the year's exhibition was £970. A sum of £500 has been added to the invested capital, which now amounts to £3500. Since the Society started, the annual balances have been expended in the improvement of the public grounds in the Quarry, the Free Library, and some money has been given to the charitable institutions of the town, last year £753 being so expended. The balance in the bankers' hands amounts to £747.

BIRMINGHAM GARDENERS' ASSOCIATION.—At the last meeting, an admirable paper on "The Gloxinia, 1739 to 1892," was read by Mr. J. MARTIN (Messrs. SUTTON & SONS), in which the history of its introduction and improvements were sketched, and instructions given as to culture. Anyone who has visited Messrs. SUTTON & SONS' nurseries when the Gloxinias are in flower, will know full well that Mr. MARTIN is an excellent cultivator and cross-breeder of them. On the following evening, the second annual social meeting of members and their wives took place at one of the largest hotels, and about 140 persons were present, Mr. W. B. LATHAM, of the Botanical Gardens, presiding.

THE WEATHER IN THE MIDLANDS.—Mr. J. W. WOODFORD, Atherstone, says that "On February 15, it was snowing hard all day, with gale from north-east, thermometer 26°; altogether, the most winterly day we have had."

A VENERABLE CAMELLIA.—Probably there is no exotic tree or shrub in West Cornwall with a more interesting pedigree than the Camellia at Penalvern, Penzance, writes the *Western Morning News*; and, like so many other things with a glorious past, its future is an unknown quantity, except in the rapidity of its decay. It is but a wreck of its former self, and the merest imitation of the blizzard of last March will completely settle it. Half-a-century ago there were scarcely any Camellia trees in West Cornwall, and for a very long period, up to last year, the one in question maintained its reputation as being the largest in the county. When in full bloom, its magnificence could not have been excelled by any single specimen in its native country, Japan. It reached an altitude of nearly 20 feet, and possessed a circumference of nearly three times its height. It was, at its prime, so densely covered with flowers that to photograph it was impossible. The young tree was brought about half-a-century ago by the late Mr. T. S. Bolitho from the gardens of his father-in-law, in North Cornwall, and the vigour with which it grew and thrived in the genial locality of Penzance was little short of marvellous.

"NATURAL SCIENCE."—Messrs. MACMILLAN & Co. announce the publication of a new monthly scientific review—*Natural Science*—devoted more especially to the interests of biology and geology. The first part of *Natural Science* will be published on March 1, 1892.

BRUSSELS BOTANIC GARDEN.—A member of the Belgian Parliament has denounced as excessive the sum expended on the Botanic Garden, which sum we believe is ridiculously small. He pro-

Tafel 284.

Cypripedium Chamberlainianum
O'Brien

del Krämlin.

CYPRIPEDIUM CHAMBERLAINIANUM *O'Brien.*

F. SANDER & CO.,
ORCHIDEEN-ZÜCHTER & IMPORTEURE
IN
ST. ALBANS, ENGLAND.

TELEGRAPH-ADRESSE: "VANDA," LONDON.

St. Albans,

Datum des Poststempels.

P.P.

Wir erlauben uns Ihre Aufmerksamkeit auf folgende neue und ganz besonders hervorragende Orchideen, welche unsere Sammler kürzlich entdeckten, zu lenken:

CYPRIPEDIUM CHAMBERLAINIANUM *O'Brien.*

nach dem Parlamentsmitglied Herrn Chamberlain benannt, ist ein absolut neues Species, mit keinem bisher gekanntem Cypripedium zu vergleichen. Unsere Neu-Einführung besitzt einen majestätischen Habitus, einen bis zu 2 Fuss sich erhebenden Blüthenstand mit bis zu 30 grossen Blumen besetzt. Diese sind höchst originell und prachtvoll zugleich. Die obere Sepale ist weisgelb mit 6 rothen Linien geziert und nach unten mit einer Menge purpur-rosa-farbenen Flecken versehen. Ganz ähnlich ist die untere Sepale nur etwas kleiner. Die Petalen sind prachtvoll karminroth gezeichnet und korkzieherförmig gedreht. Der grosse Schuh ist weis in dunkelrosa verlaufend.

CATTLEYA VICTORIA REGINA,

mit gigantischen oben abgeflachten Scheinknollen. Äusserst reichblühend mit 7 grossen Blumen auf jedem Blüthenstengel. Die Form der Blume kann zunächst mit der einer Lælia elegans verglichen werden; in der Grösse übertrifft sie jedoch diese. Die Hauptfarbe ist dunkelrosa mit dunkelroth gesprenckelt.

EPIDENDRUM GODSEFFIANUM.

Eine Neuheit von grossem Werth, äusserst reichblühend und kräftig wachsend. Das Epidend. Godseffianum mit seinen starken rothen Scheinknollen und meterlangen Blumenzweigen, erinnert an ein Riesen-Epidend. Randii.

Nähres, Preise, etc., betreffend, wird auf an uns gerichtete Anfragen mit Vergnügen brieflich erthielt.

Hochachtungsvoll und ergebenst,

F. SANDER & CO.

M.S. del. J.N. Fitch lith.

Vincent Brooks Day & Son Imp

L. Reeve & Co. London.

Cypriped. Rambo-leiocaulon

Chromo: P. Stroobant, Gand.

CYPRIPEDIUM CONCOLOR VAR REGNIERI *Rchb.f.*

P. Stroobant.

Chromo: P. Stroobant Gand. CYPRIPEDIUM CONCOLOR TONGKINENSE Jeanne Koch.

Fragment of Voyage pl. 166

Cypripedium calceolus Linn.

FIG. 3.—CYPRIPEDIUM NIVEUM AND C. CONCOLOR, FROM A WATER-COLOUR SKETCH BY W. H. FITCH. (SEE P. 16.)

the circumstance that many of the appointments and fixtures for the new year are not made till some weeks or months have elapsed, we have not been able to insert many of the dates of the smaller provincial exhibitions. The dates of all the more important exhibitions, whether in London or the provinces, have been included, as well as the usual Calendar information. The table of mean temperatures is taken from Mr. GLAISHER's reduction of the Chiswick observations, and, representing the average of forty years, may be taken as an indication of the probable temperature in the vicinity of London. In the Southern Counties, and by the sea, the winter temperature is usually a little higher, in the North a little lower, than that of London and its vicinity. In spring, especially on the eastern side of the island, the temperature rules lower than about London.

—— PALM SEEDS.—We hear from Mr. JOSEPH STEVENSON, Honorary Secretary, Agri-Horticultural Society's Garden, Madras, that he experiences great difficulty in making exchanges of Palm seeds. At the present time the garden authorities possess quantities of seeds of the following Palms:—Corypha umbraculifera, Livistona mauritiana, Elæis guineensis, Caryota urens, Areca catechu, and several varieties of Phœnix, and would be glad to receive offers in exchange from some of our readers.

—— THE ROYAL GARDENS, KEW.—The total number of visitors to the Royal Gardens, Kew, for the year 1882 was 1,244,167. This is 407,491 in excess of the number for 1881, which in its turn was greater by 111,254 than the number of visitors in any previous year. As in 1881 the Sunday visitors (606,935) were about equal in number to those on all the other days of the week put together (637,232).

—— INDIRECT EVIDENCE.—The fact that the American Vines resist or do not succumb to the Phylloxera is being acted on in a large scale in France, the American Vines being used as stocks whereon to graft the better Vines of France. At first there was some doubt as to the real efficacy of the process for practical purposes, but that doubt is now settled, and, as if to prove it, thefts of American Vines from nurseries have become frequent. Thus, near Montpellier one night 850 plants were stolen, and from another nursery a number of cuttings, valued at £200. The variety most affected by the marauders is one named Othello.

—— JAPANESE VINES. — In view of the ever-increasing losses caused by the Phylloxera it is said that the French Government have despatched a Commission to study the Vines of Japan, and which are cultivated in that country up to the snow line. M. PLANCHON is about to publish a description of the species, of which several are known in herbaria, and some are in cultivation.

—— ROYAL HORTICULTURAL SOCIETY.—The following is a summary of the privileges of Fellows and members for the current year:—A Fellow paying four guineas a year is entitled:—1. To two tickets, both of which are transferable, and will admit the Fellow or the bearer without payment to the Gardens and to the Great International Fisheries Exhibition to be held therein, and to all shows in connection therewith. Each ticket will also entitle the bearer to a season ticket holder's place at the opening ceremony of the Fisheries Exhibition, to be held in the Royal Albert Hall, for the reduced payment of 5*s*. 2. To admit daily (Sundays excepted) eight friends by written order to the garden at Chiswick. 3. To visit the shows at 12 o'clock, being an hour earlier than the general public. 4. To receive forty orders giving free admission on all occasions until April 15, from which date till May 1 the Gardens will be closed, except to Fellows. These orders will be available on the payment of 6*d*. during the Fisheries Exhibition on all shilling days. 5. To a share of such seeds, plants, and cuttings of Vines and fruit trees as the Society may have in sufficient numbers for distribution by ballot or otherwise. 6. To purchase the flowers, fruit, and vegetables grown at Chiswick, which may not be required for scientific purposes by the Scientific, Fruit and Floral Committees. 7. To receive a copy of the publications of the Society. 8. To the right of voting at all meetings. 9. To be relieved (on giving previous notice in writing) from the payment of subscriptions while resident abroad. 10. To free admission to the reading room and Lindley Library. A Fellow paying two guineas a year is entitled to one ticket giving the same privileges of admission as in No. 1; half the privileges mentioned in Nos. 2, 4, and 5; the same as Nos. 3, 6, 7, 8, 9, and 10. Present guinea members are entitled to one ticket, not transferable, giving the owner admission on all ordinary occasions, and to all shows at Chiswick and South Kensington, but not to the annual or special general meetings or *fêtes* or *conversazione* of the Society, and which does not entitle the member to vote on any matters relating to the affairs of the Society. Entrance fees of new Fellows joining are suspended for the present.

—— TITHE COMMUTATION: SEPTENNIAL AVERAGES. — Mr. MONTAGUE MARRIOTT, Editor of *Willich's Tithe Commutation Tables*, writes:—As the result of the corn averages for the seven years to Christmas, 1882, published in the *London Gazette* of this evening—viz., Wheat, 5*s*. 10¼*d*. per imperial bushel; Barley, 4*s*. 4½*d*. per imperial bushel; Oats, 2*s*. 11¼*d*. per imperial bushel—I beg to state that each £100 of tithe-rent charge will, for the year 1883 amount to £100 4*s*. 9¾*d*., or about 2½ per cent. less than last year. The following shows the worth of £100 tithe-rent charge for the last seven years:—For the year 1877, £109 16*s*. 11½*d*.; 1878, £112 7*s*. 5¼*d*.; 1879, £111 15*s*. 1½*d*.; 1880, £109 17*s*. 9½*d*.; 1881, £107 2*s*. 10½*d*.; 1882, £102 16*s*. 2*d*.; 1883, £100 4*s*. 9¾*d*. The average value of £100 tithe-rent charge for the forty-seven years elapsed since the passing of the Tithe Commutation Act is £103 2*s*. 0½*d*.

—— ROYAL HORTICULTURAL SOCIETY OF IRELAND.—The dates of this Society's exhibitions for 1883 are as follows:—Spring exhibitions, Thursday, April 19, and Thursday, May 17; Summer show, Thursday, July 5; Autumn show, Thursday, Sept. 6; Winter show, Thursday, Nov. 22.

—— THE FLORA OF BRITISH INDIA.—We are glad to welcome another instalment (the ninth) of this very serviceable work, published by Sir JOSEPH HOOKER, with the assistance of other botanists (REEVE & Co.) The present part contains, among other orders, the Ericaceæ, Sapotaceæ, Oleaceæ (Jasminum), and various other orders elaborated by Mr. CLARKE, while Sir JOSEPH enumerates the Primulaceæ and Apocynaceæ. Rhododendron lovers will be interested to see the latest revision of the Indian species by Mr. CLARKE, who has had the advantage of Sir JOSEPH's materials and co-operation, in addition to his own extensive collections and personal experience. The Malayan species (from which originate the so-called greenhouse species of gardens) are grouped together under the sub-genus, Vireya, characterised by the thin walls of the capsule twisting after dehiscence, and with very long-tailed seeds. Here come R. malayanum, jasminiflorum, javanicum. The true Rhododendrons are distinguished by a woody capsule, the valves of which do not twist, and by wingless seeds; here are placed R. arboreum and all the Sikkim species. The R. argenteum of gardens is referred to R. grande of Wight. R. æruginosum is reduced to R. campanulatum, R. Aucklandi to R. Griffithianum. Of the Primroses we have already spoken, but we add that P. imperialis is referred to R. prolifera. We may add that this part concludes the third volume, and as it has brought the record as far as Apocynaceæ it may be presumed that the work is now about half finished. The work comprises an immense geographical area, including the whole of India and Malaya.

—— LONICERA STANDISHI.—A fine specimen of this—probably the earliest flowering of all the Honeysuckles—trained to the front of Museum No. 1 at Kew is now bearing numbers of its creamy-white very fragrant flowers. Though perfectly hardy it delights in such positions as the one just noticed, and although not a climber produces longer growths and flowers more freely against a wall than in the open. This species (figured in *Bot. Mag.*, tab. 5709, and in *Gard. Chron.* 1878, vol. ix., p. 106) is sometimes confounded with the similarly fragrant L. fragrantissima and L. brachypoda. The two former were sent from Shanghai to the Horticultural Society by FORTUNE.

—— BILBERGIA NUTANS.—A considerable number of Bromeliads are highly ornamental and desirable stove plants; but, in this country at least, the whole order is comparatively neglected, except in a few establishments. On the Continent the case is to a considerable extent reversed, and private collections of these interesting plants are not uncommon. Heat and moisture are the principal requirements of most of the showy species—where these can be given the cultivation is remarkably easy. Bilbergia nutans is not by any means one of the handsomest species, but its narrow bright green leaves, the central peduncle clothed with the large bright red bracts, the drooping flowers with bright green ovaries, sepals flushed pink, and petals green with deep blue margin, form a peculiarly pleasing combination. It is now in flower at Kew, and a good figure from Kew specimens is given in the *Botanical Magazine*, vol. 105, tab. 6423.

—— TREATMENT OF FROZEN PLANTS.—In a climate like that of Britain, where in winter one week may be summer-like in its mildness, and the next almost arctic in character, bundles of trees, shrubs, and herbaceous plants sent by goods train must sometimes fare rather badly. As some of our readers might be puzzled how best to treat a frozen mass of vegetation, the following extract from vol. xvi. of the Iowa Horticultural Society may prove of interest:—"Two or three years ago I received, about the 1st of April, a bale of choice plants from Painesville, Ohio. The last of March had been summer-like, and all promised so fair, my order was packed and sent. By some mishap I did not find the goods until they had been in the express office three or four days. The day they came the express man set the bale in an open coal-shed. That night a new winter came on. I received the package and brought it home as solid as a boulder. These were the choicest of plants: Strawberries, Raspberries, Roses, Peaches, flowering shrubs, &c. They had been nicely packed in wet moss. When I opened the bundle it was with difficulty I could break the packages apart. The ground was frozen 4 inches thick, so that nothing could be set out. I dug a pit and buried the plants in the earth. When the ground was fit for setting-out, I found the plants in the pit in good order; and setting them out I never lost a plant. *A. D. Field, Indianola, Iowa.*"

—— VEGETABLE PESTS.—As an instance of the rapidity and thoroughness in which several of the Cactaceæ naturalise themselves in many countries, the following clipping from a leading daily affords striking evidence:—"A Bill has been introduced into the New South Wales Legislative Assembly for the purpose of empowering the Government to devote a certain sum to the eradication of the wild Cactus plant, popularly known as the 'Prickly Pear.' So rapid has been the spread of this vegetable pest that whereas, according to the statement of one member, £50 would have sufficed thirty years ago to rid the colony of it, a million sterling will, before many years, be required for such a purpose. It was stated that one proprietor of land in the colony had spent £1000 on his property in trying to destroy this mischievously prolific plant, but had not yet succeeded."

—— THE PHYLLOXERA IN SOUTH-WEST FRANCE.—The *Vigne Américaine* gives the following statistics for the Department of Hérault, which may suffice to give our readers some notion of the extent of the disaster in one Department only. The number of hectares destroyed annually (a hectare = rather less than 2½ acres) was as follows:—In 1880, 19,000; in 1881, 20,427; in 1882, 26,267. The number of hectares treated by submersion during the same years was respectively, 1588, 1626, and 2283. The number of hectares treated by carbon sulphide for the same period was 1875, 4632 and 3541 respectively. The number of hectares treated by sulfo-carbonate of potash was 868, 1578, and 751 for the years before mentioned. The number of American Vines used as stocks whereon to engraft the finer Vines has increased from 2624 in 1880 to 10,918 in 1882 in the Department in question.

—— SENECIO MACROGLOSSUS.—Of the enormous genus to which it belongs this is, probably, with the single exception of the handsome New World species, S. pulcher, the largest flowered one. It is a striking plant with evergreen Ivy-like glossy leaves borne on long slender twining stems. Its large pale yellow flower-heads are produced in midwinter, and afford a fine contrast to the dark shining foliage. The plant is admirably adapted for trellis-work and well fitted for dwelling-room culture. At Kew a fine specimen trained to one of the rafters is, at present,

M.S. del. J.N. Fitch lith.

Vincent Brooks, Day & Son Imp.

L. Reeve & Co. London

Cypripedium Chelsonii Rolfe

Cypriped. Sayanum. Rchb. f.

C. superbiens. Rchb. f. Allgem. Gart. Z. 1856.

M.S. del. J.N. Fitch lith.

Vincent Brooks, Day & Son Lt.d imp.

L. Reeve & Co. London.

TAB. 8183.

CYPRIPEDIUM DEBILE.

China and Japan.

ORCHIDACEAE. Tribe CYPRIPEDIEAE.

CYPRIPEDIUM, *Linn.*; *Benth. et Hook. f. Gen. Plant.* vol. iii. p. 634; *Pfitzer in Engl. Pflanzenreich, Orch. Pleon.* p. 28.

Cypripedium debile, *Reichb. f. Xen. Orch.* vol. ii. (1874), p. 223; *Gard. Chron.* 1905, vol. xxxviii. p. 442, fig. 166; *Rev. Gen. Bot.* 1901, t. 13, fig. 1–10; *Franch. et Savat. Enum. Pl. Japon.* vol. ii. p. 738; *Matsumura Index Pl. Japon.* vol. ii. p. 241; species nana, diphylla, foliis late ovatis, caulibus scapisque gracilibus glabris, floribus parvis.

Herba terrestris, 10–15 cm. altus. *Caulis* gracilis, glaber, diphyllus. *Folia* opposita, late ovata, acuta, membranacea, 3–6 cm. lata, 3–5-nervia, venis secundariis reticulatis. *Scapi* 2–4 cm. longi, arcuati. *Bracteae* lineares, acutae, 1·5–2·5 cm. longae. *Pedicelli* 1 cm. longi. *Flores* parvi; sepala et petala pallide viridia, basi brunneo-maculata, labellum album ore purpureo-striatum. *Sepalum posticum* ovatum, acuminatum. 1·3–1·5 cm. longum. *Sepala lateralia* connata, ovato-oblonga, subobtusa, 1·2–1·4 cm longa. *Petala* oblonga, acuminata, 1·3–1·5 cm. longa. *Labellum* ovoideo-globosum, 1–1·2 cm. longum, ostio angusto. *Staminodium* spathulatum, cucullatum. —*Calypso borealis*, Somoku Zusetsu, 1856, xviii. t. 85, non Salisb. *C. cardiophyllum*, Franch. et Savat. Enum. Pl. Japon. 1879, vol. ii. pp. 39 et 521.

An anomalous little species, which was originally figured in the Japanese work, Somoku Zusetsu, in 1856, under the name of *Calypso borealis*, a mistake which was pointed out by Reichenbach, in 1874, when he briefly described the plant under the name of *Cypripedium debile*; his description being based solely upon this old figure. Five years later Franchet and Savatier described a species under the name of *C. cardiophyllum*, basing it chiefly on a specimen collected on Fudsiyama, in the province of Nippon, by Savatier. They cited, however, the old figure above mentioned, and a still earlier one, in the Japanese work, Honzo Zufu, published in 1828, where it appeared without any botanical name. A reference to the work, however, shows a thoroughly characteristic coloured figure, with both flowers and young fruit. It is now known from several Japanese localities, and has also been found by Père Farges

in Western China, in the Tchen-kéou-tin district of the province of Szechuen. A single plant has also been collected by Mr. E. H. Wilson, at an altitude of 7,000 feet in the same province, though the precise locality has not been stated.

Description.—*Herb*, terrestrial, 4–6 in. high. *Stem* slender, glabrous, two-leaved. *Leaves* broadly ovate, acute, membranous, $1\frac{1}{4}$–$2\frac{1}{2}$ in. broad, with three to five primary nerves, secondary veins reticulated. Scapes $\frac{3}{4}$–$1\frac{3}{4}$ in. long, arching. *Bracts* linear, acute, $\frac{1}{2}$–1 in. long. *Pedicels* over $\frac{1}{3}$ in. long. *Flowers* small, with pale green sepals and petals, each bearing a dark brown blotch at the base, forming a zone round the column, sometimes striped with brown, and with a white lip streaked with purple round the mouth. *Dorsal sepal* ovate, acuminate, $\frac{1}{2}$–$\frac{3}{4}$ in. long; *lateral sepals* connate into an ovate-oblong, subobtuse limb, slightly longer than the dorsal. *Petals* oblong, acuminate, as long as the dorsal sepal. *Lip* ovoid-globose, nearly $\frac{1}{2}$ in. long, much narrowed at the mouth. *Staminode* spathulate, cucullate.—R. A. Rolfe.

Cultivation.—Roots of this interesting little orchid were purchased from the Yokohama Nursery Company. They were planted in pans of leaf-mould and chopped sphagnum and kept in an unheated frame where they flowered in April. Although lacking the attractions of size and colour so usual in the genus, *Cypripedium debile* has charms of its own, and is quite worthy of a place among select "Alpines." It is probably sufficiently hardy to be grown permanently in the open air, although, owing to their pose, the flowers would be practically hidden unless the plants were set on the high ledge of a rockery, or grown, as at Kew, in a pan and placed whilst in flower on the stage of a greenhouse.—W. Watson.

Fig. 1, side of lip, in section; 2 and 3, side and front views of column:—*all enlarged.*

Cypripedium Druryi. Beddome.
Mysore.

mit scharfen gelben, in's Röthliche spielenden Flecken gezeichnet. Am auffallendsten ist aber die Form der Blätter, welche bald länglich lanzettlich und nach vorn lang vorgezogen, bald vorn gleichsam ein zweites gestieltes Blättchen tragen. (Bull Cat. 1876. Fig. VI.) —

Codiaeum variegatum picturatum.

C. Abgebildet im Catalog von James Veitch und Söhne, London, Kingsroad, Chelsea, und hier wiederholt.

3. *Cypripedium Domini Veitch.* — Das schöne Cypripedium, das unsere Figur darstellt, ward im Garten der Herren James Veitch und Söhne aus der Bastardirung von Cypripedium caudatum und Cypripedium Pearci erzeugt. Es ist noch nicht lange her, dass man glaubte, es sei überhaupt nicht möglich, die tropischen Orchideen aus Samen zu erziehen. Im Garten von J. Veitch ward nicht nur dieses Problem zuerst gelöst, sondern es wurden in diesem Institut auch schon eine ganze Reihe schöner Bastarde zwischen unter sich verwandten Arten von Orchideen erzogen. Das Cypripedium Domini hält ziemlich genau die Mitte zwischen den beiden elterlichen Arten. Die Blätter sind breiter als die von Cypr. Pearci und schmäler als die von Cypr. caudatum. Der Blüthenschaft trägt 3, fast gleichzeitig zur Entwicklung kommende Blumen von

Cypripedium Domini.

grünlich gelber Färbung mit deutlicher Punktirung im Innern der Lippe. Die schwanzförmigen innern Blumenblätter werden bis 6 Zoll lang. — (J. Veitch cat. 1876 p. 30 mit Abbildung.)

D. In dem Cataloge von Friedr. Adolph Haage jun. in Erfurt abgebildet.

4. *Cycas revoluta Thbrg.* — Seite 48 dieses Jahrganges gaben wir die Uebersicht der Arten der Gattung Cycas. Wir liefern

Bot. Mag. 7275.

Cypripedium parviflorum Kellog
var. pauciflorum Rolfe
cf. Collectanea II. p. 119.

M.S. del. J.N. Fitch lith.

Vincent Brooks Day & Son Imp.

L. Reeve & Co. London.

CYPRIPEDIUM SEDENIROYAL.

8084

1906

Paphiopedilum glaucophyllum

L.Reeve & Co. London

Vincent Brooks, Day & Son, Lith. Imp.

M.S. del. J.N. Fitch lith.

Vincent Brooks Day & Son Lt. Imp.

L. Reeve & Co. London

Cypripedium guttatum.

Cypripedium Harrisianum Rchb.f.
C. barbatum x villosum.

Cypripedium Hookerae.

Nach einer frischen Blüthe aus dem Botanischen Garten genau colorirt 5. Juni 1881. Etwas zu klein die Abbildung zeichnerisch genau die Grösse der Originals.

NEW ORCHIDS.

CYPRIPEDIUM HARRISIANUM.

Hort., Veitch.

See Illustration.

A beautiful hybrid, obtained by crossing *C. villosum* with *C. barbatum*.

In foliage and flower the plant, whilst partaking largely of the character of both parents, is perfectly distinct from either.

The following, condensed from Professor Reichenbach's description, published in the *Gardeners' Chronicle* of January 30th, 1869, page 108, will convey the most accurate description we can give of this distinct plant :—

The leaves are narrower than those of *barbatum*, but broader than those of *villosum*, spotted as in *barbatum*, and glossy like those in *villosum*.

The peduncle is quite that of *villosum*. The bract is green and violet, but having less hairs than that of *C. villosum*.

The upper sepal comes nearer *C. barbatum*, but is covered with a denser pubescence. The dark violet streaks in lieu of being distinct are confluent, so that the greater part of it appears of a blackish purple, whitish near the top. It is very glossy. The inferior sepal is whitish green, and not glossy.

The petals are spread at a right angle, and are ligulate ovate acute, hairy on the upper and under limb as in *C. barbatum*, narrower than in *C. villosum*, very shining port wine coloured, with a very dark line on the middle nerves, which are green beneath and dark atro-violaceous above.

The lip is of a light port wine colour, with a tinge of light green here and there ; it has dark brown spots on both sides of the limb, bristles around the mouth of the sac, and fine dark bristles internally.

The colours are much brighter and darker than those of *C. villosum*, and the flowers are as large as those of the largest varieties of *C. barbatum*.

A plate of this beautiful novelty will be found in the *Floral Magazine* of April, 1869.

The plant has been awarded numerous First Class Certificates.

We are again indebted to the energy and skill of Mr. Dominy for this beautiful acquisition, and at his request it has been named in honour of Mr. Harris of Exeter, a gentleman to whom Mr. Dominy is indebted for some of his earliest ideas in the hybridisation of Orchids.

Price £5 5s. each.

CYPRIPEDIUM (SELENIPEDIUM) LONGIFOLIUM.

A striking Orchid, discovered on the Cordilleras of Chiriqui at an elevation from 5,000 to 8,000 feet, and thus described by Professor Reichenbach in the *Gardeners' Chronicle*, 1869, page 1,206 :—

"The flowers remind one very much of *Selenipedium dariense*. It is easily distinguished by the two angles at the inner base of the channelled claw or unguis of the lip. *Selenipedium Hartwegii* stands even nearer, yet it appears to be very distinct by its much larger and longer bracts, and by an open channel of the unguis of the lip, and by some discrepancies in the lip. Our plant appears to have the habit of the old *Selenipedium caudatum*. The inflorescence has bracts very much like those of *Heliconias*. The flowers are greenish, very shiny outside; the dorsal sepal is nearly oblong—triangular, with a brownish border. The inferior sepal is much broader and longer, or even quite as long, as the lip. The petals have a broad sub-cordate base, and taper into a tail, greenish, with white borders, and two brown streaks at the base and brown at the ends, these tails being much shorter than those of the long-tailed species. The lip is highly curious, for the basilar margins of the unguis overlapping one another, so that there is no channel left."

Price 21*s.* *to* 63*s.* *each.*

EPIDENDRUM SYRINGOTHYRSUS.

A most beautiful and free-flowering Epidendrum, introduced by us from Peru. It is certainly one of the finest of its species. It flowers in panicles of seventy or eighty blooms, the flowering growths being from two to three feet in length. The throat is white, sepals and petals light purple, the labellum tipped with pink.

Price 105*s.* *each.*

VANDA CÆRULESCENS.

(REICHENBACH.)

See Illustration.

For the introduction of this Orchid gem we are indebted to Lieutenant-Colonel Benson, who discovered it growing in Burmah, at an elevation of 1,500 feet above the sea.

Though the flowers are much smaller than those of the well-known *Vanda cærulea*, this species is EQUALLY worthy of cultivation, the sepals and petals being of a decided

CYPRIPEDIUM HARRISIANUM.

Price £5 5s. each.

For full description, *see* page 23.

Cypripedium javanicum. Blume.

Jeanne Koch.

Chrom. P. Stroobant, Gand.

CYPRIPEDIUM INSIGNE *Wall.*
VAR. CHANTINI, *Hort.*

1. CYPRIPEDIUM INSIGNE MAULEI 2. C. PUNCTATUM VIOLACEUM

J. Fitch del. et lith.

Vincent Brooks Day & Son Imp.

L. Reeve & Co. London.

Cypripedium exul Rolfe.
C. insigne var. exul Ridley.

will soon induce disease, especially if the temperature of the house gets low, and the latter practice carried to excess will lead to the loss of the foliage at the base of the plants. Where these have to be grown in the same house the Vandas must be placed at the coolest end, as a temperature of 55° to 60° is sufficient to maintain them in perfect health during the winter. One of the best winter Orchids now showing flower is Phaius grandifolius. This should be grown in quantity, as it is one of the few Orchids that will stand being used for room decoration without injury. Where it is used for this purpose it should be prepared by keeping it cooler for a few days before taking it into the room, and while there should be kept drier at the root. Any shy flowering Orchids, such as Schomburgkia tibicinis, Eriopsis biloba, Epidendrum bicornutum, and Cyrtopodiums, must be specially treated at this season of the year, by placing them on dry elevated shelves, maintaining a dry but moderately warm atmosphere around them, and giving only sufficient water at the roots to keep them from excessive shrivelling. A couple or three months of this treatment will thoroughly ripen the bulbs, when a good show of flower will follow. *J. Roberts, Gunnersbury Park Gardens.*

Fig. 127.—Cypripedium insigne, var. punctatum violaceum.

Cypripedium insigne punctatum violaceum and C. insigne Maulei.—Well known as the superior merits of the former variety have always been to the few who have been lucky enough to obtain it true, so many have expressed an opinion that it is nothing but C. insigne Maulei that we are glad to receive from R. P. Percival, Esq., of Birkdale, Southport, a properly authenticated flower of each, taken from strong plants grown on precisely the same conditions. So vastly superior is C. insigne punctatum violaceum to the other variety that we could not refrain from having drawings made of them (figs. 126, 127) in order to set the matter at rest once for all. The variety under notice came to this country as a stray seedling-like plant among some imported Orchids in the year 1855; chance and its own distinct appearance favoured it, and it was carefully tended. On blooming it amply verified the good opinion formed of it, as the flowers, although borne on a small plant, were of a better shape and more brightly and distinctly marked than those of any other variety. Mr. O'Brien, in whose care it was, jealously nursed and guarded it, but it was not until about the year 1869 that any of it was parted with, and soon the sale of it had to be stopped, as Mr. Dominy (who was one of the first to recognise its merits) and a few more who were waiting for the plant would soon have taken the stock in spite of the rather prohibitory prices. The alternate selling and withholding of the plant according as the stock increased or decreased no doubt has often caused C. Maulei to be passed off for it, as indeed in after years, when C. insigne punctatum violaceum became more plentiful, it may sometimes have found its way into gardens as C. Maulei, and hence the confusion. In small plants the error is not so easily detected, but when both are grown strong there is scarcely any comparison, particularly in point of size of flower, as a glance at our illustrations will prove. The confusion in the names of this section of C. insigne was further confounded some few years ago by the introduction of the variety called Chantinii, which was nothing but C. insigne Maulei. Although at present C. insigne punctatum violaceum may sometimes be found under that name, there is no doubt that C. insigne punctatum is distinct, and one of the finest of Cypripediums, and Mr. Percival has no cause to regret the forty odd guineas he gave for it.

Odontoglossum crispum.—In Messrs. Jackson's collection at Kingston the show of flowers promises to be unusually fine in a week or two. A good many of the most vigorous plants are suspended from the roof of a low span-roofed plant-house, and the flower-spikes are both strong and plentiful. The varieties vary a good deal. We noticed one fine variety with four spikes, and as many as twelve flowers to a spike. This variety is beautifully marked with clear spots. O. Andersonianum has two branching spikes; this variety is sweet-scented, and is extremely vigorous. Upon the whole the condition of the collection is remarkably satisfactory, and the show of flowers about Christmastide will be worth going a long way to see.

Arpophyllum giganteum.—A fine specimen of this rare Orchid is now showing flower in Messrs. Jackson's collection at Kingston. It is the same variety that Mr. Carson used to grow at Nonsuch Park a dozen or fourteen years ago. It has a broader leaf, throws up a much finer spike of flower, and blooms more freely than the small-leaved variety which is commonly cultivated.

Lælia autumnalis atro rubens.—Go when one will there is always something interesting to be seen in Messrs. Veitch's Orchid-houses, but a specimen of the above plant having seven flowers upon one spike is a sight that excites one's admiration for these flowers to the highest degree. The flowers are of a purple hue, the labellum being of a rather deeper purple than the sepals and petals, and the throat is white.

Sophronites grandiflora.—Whoever thinks of cultivating Orchids should make this pretty little plant one of their first purchases. This is the natural season for the plant to flower, and its scarlet blooms are the brightest objects in the Orchid-house at the present season.

Saccolabium Blumei.—Messrs. Heath & Son, Exotic Nurseries, College Road, Cheltenham, have kindly forwarded me an unusually grand, and at the same time very curious, inflorescence of this plant. The superior half of the flower has not a single petal, all the flowers being trisepalous, and with a lip not superior to that organ in the petalliferous flowers. It belongs to the Saccolabium macrostachyum, Lindl. Finally, we may learn whether those things are constant or merely varieties of one protean type. *H. G. Rchb. f.*

Dendrobium Leechianum ×. — From Mr. Swan, gr. to W. Leech, Esq., Fallowfield, Manchester, come several blooms of this free-flowering and very desirable hybrid, which was figured and described at p. 256 of our last volume. A spike of four flowers, Mr. Swan informs us, was taken from a bulb that has produced eighteen blossoms, yet which is little more than 1 foot in height. The stock of plants at Oakley consists of eighteen, which are either in bloom or showing flower; and though some of the flowers before us have been open five weeks, they are still bright and fresh. A fine spike of the lovely Calanthe Veitchii superba also came to hand in the same box.

Odontoglossum luteo-purpureum (*Lindl.*) radiatum (*Rchb. f.*)—A very charming specimen of this is in flower just now with Messrs. Heath & Son, Exotic Nurseries, College Road, Cheltenham. An old bulb produced twin bulbs, and between the two stands a very fine deeply coloured inflorescence, the flowers being of very strong good texture. It would be interesting to know (of course I got but a sketch and half the inflorescence) whether in all probability the peduncle belongs to one of the bulbs, or whether it is the product of an especial break which would be quite gorgeous. *H. G. Rchb. f.*

Phalænopsis, with which one house at Rendlesham is mostly occupied, continue to thrive admirably; the house in which they are grown, like the others devoted to Orchid culture at Rendlesham is a low span, constructed so as to give all the light possible, and standing away from everything that could intercept it. The plants are hung well up to the roof, with air on at all times in all weathers; it is admitted freely through openings in the walls at both sides, beneath the side stages. The temperature as near as may be is kept at 70° in the night in summer, and 65° by night during winter. Under such treatment the leaves attain more than ordinary substance, lasting proportionately long. All the kinds seem to do well. Of P. amabilis, P. grandiflora, and P. Schilleriana, there are numbers of splendid examples; the largest, P. grandiflora, is just upon 2 feet from point to point of the leaves. The scarce P. Portei has six good leaves, the biggest 9 inches long, by 3¼ broad. Cattleya superbiens, hung up in the same house close to the roof, keeps on year after year blooming freely, and gaining additional strength. A couple of plants of Vanda Denisoniana are doing finely. *T. B.*

Notices of Books.

Vines at Longleat: *their History and Management.* By William Taylor. *Journal of Horticulture* Office.

This is the title of a little book on the Vine, by Mr. William Taylor, who in a brief chapter at the commencement gives, as it were, a key to his work, and then proceeds to detail his practice in simple and concise language that all may understand. Mr. Taylor is so well known as one of the most successful cultivators of the day, and especially as a cultivator of the Grape Vine, that a record of his practice, in which he has not scrupled to chronicle failures as well as successes, renders the book more valuable and interesting than it otherwise would be to those who are in search of information upon the subject upon which it treats. Every chapter in the book has a direct bearing upon its successor, and, indeed, the little *brochure* in this respect is entitled to the highest praise, coming from the pen of a practical gardener. Upon the great structural capacity of the vinery at Longleat, which necessitates certain departures from ordinary practice, it is not our intention to dwell, believing—indeed knowing—as we do, that such structures are rather the exception than the rule. We will, therefore, confine our remarks more especially to the "cultural points" set forth by Mr. Taylor, as it is these that are of greatest general importance. The chapters upon drainage, water supply, and partitioning the borders contain valuable information, and may be perused with advantage by Vine growers. Mr. Taylor's system of trellising may answer well in his own, or similar cases, but surely it is not necessary to train Vines at 4 feet from the glass. Giving full consideration to the evils resulting from trellises being too near the glass as referred to by Mr. Taylor we would rather recommend as a general rule that Vines be trained at a maximum distance of from 18 inches to 2 feet from the glass than at 4 feet. "We do not," writes Mr. Taylor, "find that plants become drawn in such a place as the Crystal Palace, neither do my Strawberry plants become drawn during forcing, though they are from 4 to 8 feet from the glass." We consider there is no analogy whatever between the class of plants grown at the Crystal Palace and the forcing of the Vine or the Strawberry; and we should be surprised to find many first-rate cultivators endorsing this statement. Admitting air from above the foliage is good in principle. Mr. Taylor, arguing as to temperature, states with much force that there is often as much as 8° difference between the surface of the ground and a height of 4 feet above it, but in the case of a vinery the parallel hardly seems a strong one, as the volumes of heat ascend to the highest part of a house first; so that if there is a clear foot of space between the leaves of the Vine and the glass there seems no possibility of injury from extremes of temperature, and as a matter of fact there is none. The chapters upon border making, raising the plants, and planting supply the most exhaustive details of culture in a lucid style and afford sound practical instructions. We are bound to add, however, that but few Vine growers will think it necessary to plant their Vines at 7 feet apart. In regard to early training Mr. Taylor rather deviates from the usual practice, but the principle he recommends is in the main sound. The next chapter on "the first pruning" is not so intelligible; there is a laboured attempt made to prove that Vines strike root so freely at either end that—to use Mr. Taylor's own words—rootless heads are as good as headless roots, meaning thereby that the top of a Vine cut off and rooted is as good as its lower portion after a certain time (three years). This theory hardly tallies with experience, because the portion of the Vine that is already furnished with fibrous roots should, in the natural order of things, have a long start of the rootless top. Mr. Taylor further says the Vine's principal storehouse is not in its roots, but in its stems and branches. Exactly; but what is the primary source of supply? Why, of course, the roots and the leaves, which collect the food for the stems and branches. The general instructions given with regard to pruning, the eradication of insects, and other routine treatment are of the most trustworthy character, and are detailed with much minuteness and exactitude. The author's experience is in favour of the extension system, and a great many others will coincide with him who have the means of carrying it out, but where variety is required from small houses it is not always convenient nor desirable to fill a house with only one or two kinds of Grapes. Mr. Taylor gives useful information relative to exhausted Vine borders, and suggests a simple remedy—the addition of lime, to soils where that desirable element is known to be deficient, in preference to making new, and it must be admitted, in many cases expensive borders. The chapter in which Mr. Taylor treats upon this part of his subject, as well as the subsequent one upon temperatures, may be read by amateurs, and indeed by all grades of gardeners, with interest as well as profit, as link after link of the whole chain of practical evidence is unravelled in a manner that can only be accomplished by a practitioner of long experience. It may, however, be taken as a broad rule that Grapes take nearer six weeks to stone in than three weeks, as stated by Mr. Taylor.

Upon the subject of air-giving Mr. Taylor is singularly exhaustive and clear, but we should prefer leaving air on all night in the case of an east house at midsummer rather than risk the chance of any assistant attending to it as early as 4.30 A.M.!

The remaining chapters of the book elucidating Mr. Taylor's curriculum of general practice, especially that referring to "sustained fertility," cannot but be of service to many who cannot obtain suitable soil for love or money, and who are often at a loss to know what to substitute for it. With the exception of a few points, which probably affect the author only under his own peculiar circumstances, we can fully recommend the book as a carefully written and trustworthy guide, giving sound practical information upon every subject bearing upon the culture of the Grape Vine.

A History of British Birds. (Van Voorst.)

The fifteenth part of the fourth edition of Yarrell's celebrated book has just been issued by Mr. Van Voorst. With this number the second volume is completed, and the third commenced. A change of editorship is also announced, Mr. Howard Saunders taking up the work in place of Professor Newton. It is needless to reiterate commendations either on text, illustrations, or typography. Concerning the carrier or homing pigeon, we are told on the authority of Mr. Tegetmeier that thirty years ago only a few birds returned home the same day in the Belgian pigeon races of 300 miles, while now, by careful selection, it is unusual for any of the prizes in a 500 mile race not to be won on the very same day that the birds are flown. Thus, in the great Belgian race of 1882, which took place from Monceux, south of Bordeaux, to Brussels, a distance of 510 miles, 1674 birds were liberated at 4.12 A.M., the first bird reached home at 4.37 P.M., his speed having been about 1300 yards per minute. One hundred and fifty birds were back the same day. The faculty possessed by these birds is not merely instinctive, but due to training; hence the best bred birds will be lost if taken untrained 100 miles from home.

—— *Amateur Work Illustrated*, is the title of a monthly serial published by Messrs. Ward, Lock & Co., and ably edited by the author of *Every Man his Own Mechanic*. We are glad to observe from the volume before us, that our anticipation, formed after the appearance of the first few parts, that it would meet a distinct want, in providing a medium for enquiry, and for the diffusion of sound practical knowledge and advice, turns out to be correct. Among the legion of amateurs possessing a turn for mechanics, or work of some kind, very many often come to grief in their work for the want of a little sympathetic instruction and guidance. The amount of useful knowledge which this volume contains, on subjects ranging from the manufacture of an organ to the mixing of a pail of whitewash, is something surprising; and it would be hard to find a more sensible Christmas present for a youngster in search of a hobby, or a volume more interesting and useful to amateur mechanics in general.

—— *Flora of Italy.*—The *Compendio della Flora Italiana*, published under the editorship of Professor Gibelli, has now reached its 720th page and 88th plate. The genera are illustrated by small but clear engravings.

British Moss Flora.—Dr. Braithwaithe's excellent *Moss Flora* has now reached its 8th part, and its 20th plate. The care with which this work is prepared is as remarkable as ever; even pre-Linnean synonyms are given.

The Flower Garden.

BEDDING PLANTS.—The recent weather has been very trying to the store plants in pits and frames, particularly to the late cuttings, which have not yet become well-rooted, and they will require great attention in the constant removal of all incipient signs of mould and decay. In the case of the plants potted from the flower beds, all decaying foliage must be removed, and mouldy shoots shortened with a sharp knife. At the same time, as the prevalence of a damp and stagnant atmosphere is the principal cause, and at all times most inimical to the plants, it must be checked by free ventilation at every favourable opportunity, particularly on fine mornings, when it may have become necessary to water any which may have become over-dry. It should be borne in mind that in such succulent things as the whole tribe of Scarlet Pelargoniums, dryness at the roots, when not carried to excess, is not so much to be dreaded as the moisture, and therefore in addition to plenty of ventilation a little heat should be put on at the same time to assist in keeping all the surroundings dry. Unless in the case of frosty nights, when it cannot be avoided, heat should not be shut up with the plants and all apertures closed, as it will make them tender and promote a spindling and attenuated growth, when the great object is to keep them dwarf. Light, heat, and ventilation under proper control appear to be the only means by which these results can be secured. We may, however, observe that a certain amount of heat in the soil is an absolute necessity to the rooting processes, and therefore all late struck cuttings and late potted plants should be indulged with the warmest ends of the pits or whatever structures may be available for the purpose of wintering these and kindred plants.

MIXED HERBACEOUS BORDERS.—Everything here should now have become quite dormant, and the whole of the old flower-stems should be at once removed to the rubbish-heap. If it is not deemed advisable to lift the plants and deeply trench up the borders and renovate them with manure and new composts it will be found a very good thing to stir the surface and cover the whole with well decomposed manure. If a good dressing of soot can be spread over previously so much the better as it will help to keep in check the slugs which are greatly destructive to the young growths. The experience of last winter was a caution in this way; there was never frost enough to drive them from their usual haunts, and they were more numerous and destructive than I ever remember.

PROTECTION TO TENDER PLANTS.—The occurrence of severe frost a short time back reminds us of the necessity of applying a slight protection to various semi-tender plants the roots of which should be guarded from severe frost by covering them with a sufficient quantity of some light dry material such as cinder ashes, which can be heaped up in a conical form with a broad base, and is one of the most efficient protectives I know of. It is less liable to be disturbed by the birds than cocoa-fibre, or leaf-mould, while the shape of the cone is calculated to throw off heavy rains and tends to preserve a dryness and warmth to the roots which it takes a very low temperature indeed to reach. By this means fine plants of Dielytra spectabilis may be secured, also Salvia patens, if left in the open ground, may be so preserved; Acanthus grandiflorus, Gunnera scabra, Tritoma Uvaria, grandis, and intermedia; Lilium auratum, and the varieties of speciosum and japonicum; all of which will be the better for a little extra covering. Although most of them will pass through such a winter as that of last year with impunity, yet, as such winters are the exception, it is always best to be on the safe side, and the more so as the covering may be easily removed as soon as the growth is likely to commence in the early spring.

TRELLISES, &C.—Advantage should be taken of mild weather to prune and regulate climbers on trellises and conservatory walls by tying out at once all that are perfectly hardy, but the tenderer sorts, such as the varieties of Ceanothus, will be better only partially fastened, so as to facilitate the application of mats or other protection in very severe weather, at

or Tudor style, and without being pretentious, is large, and in admirable accord with the surroundings.

Just on the margin of the ornamental water, and evidently enjoying greatly the abundant moisture for its roots, is a grand cut-leaved Alder, the branches of which spread to a diameter of some 80 feet. Beech, white Poplar, and Elms, are very fine indeed, whilst shrubs of many kinds, Rhododendrons especially, grow luxuriantly. The bedding display which decorates the lawn in front of the house is marked by gaiety and brightness, yellow Calceolarias, Lobelias, and bedding Pelargoniums thriving and blooming luxuriantly. Seen under the heavy and continuous rain which so sadly marred the pleasure of our visit two combinations stood out as singularly pleasing. One was a mixture of the old silver bedding Pelargonium Lady Plymouth, and a capital blue Viola, well named by Mr. Herrin, the gardener, Chalfont Beauty; the other was Marshal McMahon bronze Pelargonium set in a carpet of dwarf blue Ageratum. This latter gave one of the most pleasing effects we have seen for a long time. A few carpet beds were looking in the rain clean, fresh, and pleasing; their flatness and formality more than recompensed in the ever bright smiles they reflect under dismal weather aspects. It would not be right to pass from the pleasure-grounds without making allusion to the charming appearance presented by the large quadrangular courtyard, round which stand the servants' offices. Here — unwonted sight!—may be seen not only groups of plants in pots, effectively arranged, but also many large plants. Still farther, all available wall space is covered by climbers of some sort, even Vines being used to hide from view some unsightly roofing.

The kitchen gardens adjoin the pleasure-grounds, and are very conveniently placed in reference to the kitchen department. At the farther end, embowered in luxuriant shrubs, stands the gardener's cottage, approached from the park by an independent entrance; behind, however, it opens into a roomy plant-house, from which, on either side, run the fruit-houses. Coming from out this plant-house there is seen on either hand an old-fashioned flower-garden, and from the centre runs right through the kitchen garden a broad pathway bordered on either side by flowers in various forms, and backed by espalier fruit trees, not a few of which seem of considerable age. Some are yet fruitful, but others are well-nigh spent. Existing conditions allow gardening to be done under the reverse of high-pressure. It is of a useful, plodding, satisfying kind, keeping pace with the wants and needs of an establishment that is not exacting. None the less we see evidence of good cultivation all round, and of plenty.

In the vineries were hanging many capital bunches of Grapes; and as not a few readers will perchance regard the condition of a man's Grapes as the highest test of his gardening abilities (a point about which there may be two opinions), it may not be uninteresting to state that Mr. Herrin exhibited not a few of the capital bunches we saw hanging in the Chalfont vineries with excellent results at the Crystal Palace in September last. Amongst kinds not at all common was fruiting a rod of Abercairney Seedling, a fine well-coloured black Grape that seems to be intermediate between Black Hamburgh and Alicante. The berry is rather oval, and of rich brisk flavour that, allied to its evidently good fruiting qualities, should make it a popular variety. Of better known kinds Hamburgh, Alicante, Lady Downe's, and Mrs. Pince's Black Muscat, were all good, the bunches large and well-finished. Golden Queen, also fruiting, was not in such good condition as was Muscat of Alexandria, although these latter Vines had been only recently lifted and replanted with capital results.

Peach-houses newly planted were promising well, the trees making fine growth. Of Strawberries in pots the favoured sorts are Vicomtesse Hericart de Thury, President, and Keens' Seedling. These are in first-rate condition.

In plant-houses there is a good collection of useful furnishing stuff, and not a few good specimens; and upon a roof Passiflora racemosa is blooming finely. Mr. Herrin is a successful grower of large-flowered Chrysanthemums for exhibition, and some 250 plants in pots, tall, robust, and carrying, even so early, large plump buds, testify that the conditions of culture which lead to success are being largely complied with. *D.*

SARRACENIA ALBA.—A specimen of this charming novelty may now be seen in Messrs. Veitch's nursery, Chelsea, bearing three fine pitchers of remarkable size, beautifully variegated towards the top, and nearly 2 feet in length.

FORESTRY.

FOREST WORK FOR DECEMBER: PLANTING.—The mild open weather that we have experienced during November has been in every way favourable for planting operations, which in most districts should now be in an advanced state. Where the soil consists of stiff clay, or a peat-bog which retains a large quantity of water by capillary attraction, planting had better be deferred till spring, as we have found the antiseptic properties of peat to be very injurious to the roots when allowed to lie for any considerable time on the cold bog before commencing to grow. Drain, pit, and otherwise prepare ground intended for spring planting, also see that the fences are in a good state of repair, so that the inroads of cattle and sheep may be averted, nothing being more injurious to newly planted trees than having their leaders or branches nibbled off by sheep or hares. Where the latter are numerous, it is well to provide against their attacks by the timely use of wire-netting around the plantations, which will also be a guard against rabbits, the ravages of these during severe weather being quite as much to be dreaded as that of either sheep or hares. It is advisable where a home nursery is on the estate, only to lift at one time sufficient plants for a couple of days' work, as by this means the roots never become dry—a matter of much importance for the future welfare of the trees; but, of course, on this a great deal must depend upon the distance the nursery and plantations are apart, as well as on the number of men employed.

THINNING.—The thinning of all hardwood plantations (Oak excepted) should now go on, but however anxious the forester may be to prosecute this work, he will probably have to give way to game preservation. Hedgerow timber should now be grubbed or felled, and cut into convenient lengths, advantage being taken of the first dry frosty weather to have it removed, so that the fields may be as little cut up by cartage as possible. Dead or dying trees on the lawn, pleasure-ground, or park, may be removed during suitable weather. Prune off all dead branches, or those that have become broken by the wind, and either have them carted away or burned. Plantation drives and rides should be gone carefully over, and any protruding branches cut back so that the sportsman may have an uninterrupted view; also see that rabbits have not undermined the roads, leaving holes alike dangerous to horses or foot passengers. Scour out and deepen plantation drains, leaving them of such a width at the bottom that a spade can be conveniently used in cleaning. Cut new drains where such are needed to remove stagnant surface water, and see that the gratings of all closed drains do not become choked by an accumulation of leaves, which at this season give no little amount of trouble.

NURSERY.—During open weather the transplanting of strong seedlings may be proceeded with, more especially where vacant ground of a suitable quality is at hand. In some cases, however, this is better left over till spring, for, should hard frost succeed, the young plants are apt to get thrown out of the ground, but by a little attention this may to a great extent be averted. Turn compost heaps, and during suitable weather wheel on manures, road-scrapings, lime, &c.; also trench or ridge up vacant patches to receive the full benefit of frosts during winter. It is advisable to have a portion of the nursery under green crop every year, as it not only cleans the ground but leaves it in prime condition for being planted with seedling forest stuff. All seeds recently collected should be examined, especially those in the rot-heap. Collect tree seeds as they become ripe, and have them stored away in a dry and airy situation until required for use.

ROADS.—All roads and drives should now be put in thorough repair, when they will become settled and solid by traffic before spring. In repairing them avoid using boulders, as they are both disagreeable and unsatisfactory. The formation of new roads may also be carried out, in which thorough drainage, a sound bottom, and finely broken surface metalling are the main requisites. Collect leaves on lawns and drives, and have them conveyed at once to the rubbish heap.

HEDGES.—Where not already finished, the trimming of hedges should be prosecuted and speedily brought to a close. Now is a good time to form new hedges or to fill up gaps in old ones by planting young quicks. The ground alongside existing hedges should be cleaned at least once during the season, which will much enhance the value of such fences by promoting strong, healthy growth. The hoe and rake we find best for this purpose. *A. D. Webster, Penrhyn Castle, North Wales.*

The Herbaceous Border.

HARDY PLANTS AT GRASMERE, BYFLEET. — So much has been said about the pleasure to be derived from the cultivation of hardy herbaceous plants and shrubs that I resolved to pay Mr. Joseph Stevens a visit at this dull season of the year, knowing that his choice collection of over 10,000 distinct species and varieties would afford a fair opportunity of forming a correct opinion. I am bound to say that I was quite unprepared for the treat that was in store for me, as I was under the impression that I had delayed my visit a little too long, and that the recent heavy frost or two must have destroyed everything in the shape of bloom. Such was not the case, however, as a fair sprinkling of flowers remained, and the immense dried stems of Lilies on the edges of the shrubberies needed only to be clothed by the eye to form subjects to wonder at. I never saw anything like the growth of these Lilies. On a single stem of L. Dalmaticum 5 feet in height I counted fifty-two flower-scars, and many of the clumps of L. auratum bore a score of stems each from 6 to 8 feet in height. Other plants exhibit here equally amazing proportions, such as Delphiniums 8 feet in height, with stems as large as a broomstick, and Polygonum cuspidatum 10 feet in height and 12 feet across. Such plants as these, and many others seen in perfection at Grasmere, cause the hardy plantsmen to rave about them so, and well may they be excused.

Years of pleasant care have been given by Mr. Stevens to his hardy plant collection, and their present condition compensates him for his systematic method of labelling, arranging, and proving all the plants of which it is composed. Never is a plant planted without having a neat oval zinc label bearing its number corresponding to that in the book being placed to it. Had this important matter been neglected (as it too often is) a great part of the interest of the collection would have been lost, and quite one-half of the plants would be subjects of doubt and useless speculation, so far as their names go, at various times throughout the year. The plan of the garden is also well conceived; first, near the house, comes the large rockery, then a broad border runs round the lawn and pinetum, supplemented by occasional beds for distinct classes of plants; and another sunk rockery for dwarf plants is constructed at the further end of the garden; add to this the large trial ground, at present containing small specimens of all the rarest Coniferæ, &c., and we have a garden well arranged both for the plants and for those who wish to admire them. Beside the rockery is a bed containing all the varieties of Laurel, many of them being very distinct, the variety Cerasus lusitanica azorica having thick blackish-green leaves; C. camelliæfolia, curious curled foliage; and C. latifolia, resembling the Indiarubber plant in growth more than the common Laurel.

On the rockery we find Bambusa aurea 10 feet in height greener than in summer; B. Ragamowski, broad and solid-looking; B. Maximowiczii, and B. Fortunei, beautifully variegated; a few Hepaticas still in bloom. The evergreen British Ferns, such as the varieties of Scolopendrium (one beautifully crimped mass of S. vulgare crispum 3 feet across), Polystichum, Polypodium, Lomaria spicant looking as clean and bright as ever, while Helleborus orientalis, H. abchasicus multiflorus, and many others, had already flowers open, and were smothered with well advanced buds, which will probably receive a check before long as a punishment for their precocity. Still bearing its pretty Marigold-like flowers is Tagetes Parryi, and near it Iberis Pruiti, 2 feet across, covered with pale lilac flowers, and Myosotis elegantissima, beautiful with its coloured leaves. Crowning one of the peaks is a fine purple form of Veronica Andersoni, while still displaying flowers are several varieties of Menziesia, Erica, Calamintha alpina, Alyssum argenteum, A. saxatile, Aster Reevesii and other Asters, Diplopappus Parryi, Veronica spicata, Potentilla colorata with the most brilliant carmine flowers, mule Pinks, and Rubus rosæfolius coronarius.

Noticeable in the rockery for their beautiful foliage are large tufts of Stobea purpurea var. alba, Thymus corsica, T. montana, T. stricta, dwarf Veronicas, patches of Draba, Saxifraga Valdensis, Linaria genistifolia, and many other beauties, all looking very happy in their comfortable nooks. The broad border

(which has a good hard bright gravel walk in front of it, with massive Ivy-covered arches at intervals) contains the stouter growing plants. It is well arranged to present a bright aspect at all times by planting the evergreen and deciduous plants so as to be mingled in something like order, some old-fashioned Roses being very lovely; one (Rosa Stanwellii?), which bore many heads of irregularly formed double blush flowers, pleased me much better than any of the new hybrid-perpetuals. In addition to the ordinary herbaceous plants in these large borders are fine Rhododendrons, Sedums, Andromedas, Gaultherias, Vacciniums, Pernettyas, Hypericums, Berberis, and a great quantity of other rare shrubs, the foliage of many of the Berberis being as bright as flowers.

The lower rockery is devoted to mossy Saxifrages, and plants of a like habit, each of which by its own arrangement displays a wonderful piece of Nature. The shrubbery and pinetum are well stocked with a good collection of principally rare things, mingled with Pampas-grass, the Hollies being especially fine, a grand Libocedrus decurrens 20 feet high, perfect; and another of Podocarpus koraiana, lovely. In front of the house is the variegated plant garden, which contains many grand foliage plants I had never seen before, the whole forming a most interesting place, and one from which the owner and his family seem to get a great deal of pleasure.

The garden-house, covered with that little known Hedera algieriensis variegata, and its porch with Travellers' Joy, is very picturesque and beautiful. *James O'Brien, Harrow-on-the-Hill.*

The Arboretum.

CORNUS CANADENSIS.—In reference to your interesting notice of Cornus canadensis in the *Gardeners' Chronicle* for Oct. 28 (p. 565), it may be well to state that the name of "Baked Apples and Pears," applied to it in Collinson's note, is probably an error. "Bake Apple" is the common name used here to designate the fruit of Rubus chamæmorus, which grows abundantly down to the sea-level in several parts of Nova Scotia and Cape Breton, and fruits freely. The "berries" are brought to the Halifax market, and sold as "Bake Apple"—the only name, indeed, by which they are known here. In the highlands of Scotland they are called Avrons, and in books Dewberries. The Cornus canadensis is very abundant in Nova Scotia, often covering roadside banks, and producing plentifully its clusters of bright coral-red fruit; but the fruit is not edible. It is called "Pigeon Berry," and is commonly used for personal decoration, for which purpose it is not excelled by any fruit known to me. I should be glad to know the date, actual or probable, of the note in which Collinson refers to the Cornus canadensis growing "all about Halifax," &c.; also when and where Collinson probably got his first plant or seeds of C. canadensis. *George Lawson, Dalhousie College, Halifax, Nova Scotia, Nov.* 15.

CASTANEA CHRYSOPHYLLA.—At p. 435 of vol. xiv. may be found a notice of this most interesting Californian tree, along with many others that flourish in the beautiful grounds at Tortworth Court. This Chestnut is unquestionably one of the most distinct and handsome evergreen trees that has been introduced during the present century. Not attaining more than what may be described as a small or medium height, it is essentially a species that admits of being introduced to the lawns or shrubberies of gardens of limited extent, as well as where the grounds are extensive, and on this account is the more valuable. It has small handsome foliage, bright green on the upper surface, and almost as yellow beneath as the best varieties of the golden Fern (Gymnogramma chrysophylla). The noble owner of Tortworth—who, we understand, is an enthusiastic lover of trees—may be congratulated upon possessing what we suppose to be the finest specimen in Europe, and, so far as we know, the first that has borne fruit in England. The seeds, excepting those so kindly forwarded to us, have, we believe, all been sown, and with Mr. Shingles' care and experience will stand an excellent chance of growing, and in this way being the first of a race raised from English raised seeds, representing a species likely to become a favourite with all who take an interest in arboriculture. Accompanying are Mr. Shingles' remarks upon it. *T. B.*

"Amongst the evergreen trees and shrubs that have been introduced into this country this is one of the handsomest; and the fact that it has stood uninjured through the late severe winters much enhances its value as a decorative tree. The specimen growing in the arboretum here, in a somewhat sheltered position in a sandy loam resting on the Old Red Sandstone, is possibly the finest to be found in Great Britain; it is 22 feet high, and 15 feet through. It has annually borne quantities of sterile burrs, with a miniature Chestnut about the size of a very small Pea. But this year, and for the first time, it has produced fertile burrs with perfect fruit. The leaves are dark green above, with a rich golden powder beneath, and when moved with a gentle breeze produce a most charming effect rarely seen. It inhabits California and Oregon, where it is seldom found more than 6 feet high, but in the Cascade Mountains of Oregon it is said to attain a height of from 30 to 50 feet. It will be most interesting if any of your readers will report through the medium of your columns their acquaintance with this beautiful tree; also, if this is the first instance known to them of its having produced fertile fruit in this country. I may add that the plant in question was purchased from the Messrs. Veitch directly after its introduction into this country. *Thomas Shingles, Tortworth Court, Gloucester.*" [We have seen it in fruit at Combe Wood, but whether the seeds ripened we do not know. Perhaps Messrs. Veitch will oblige by telling us. ED.]

CRATÆGUS CARRIÈREI.—This tree was raised from seed of C. mexicana, which it surpasses in vigour, foliage, and flowers. The latter expand in spring, are at first white, subsequently flesh-coloured. The fruits resemble Cherries in form, size, and colouring (bright red), but the principal merit is its persistence throughout the winter. A leafless tree laden with orange or crimson fruit is certainly a first-class decorative plant. The tree is very hardy, since it endured the winter of 1879-80 unhurt. It is grafted on the Hawthorn, and is introduced into commerce by MM. Baltet, of Troyes.

AMARYLLIS AUTUMN BEAUTY.—One of the most beautiful of the Amaryllid family. We lately saw a nice plant of it in flower in Messrs. Veitch's nursery, with from four to five flowers upon a spike. The flowers are of a crimson hue, deeply veined with lilac.

Orchid Notes and Gleanings.

WORK IN THE HOUSES.—Some of the spring-flowering Dendrobiums that finished up their growths early in the season, and have been at rest for a couple of months, will now be commencing to show their flower-buds up the sides of the bulbs, and if the pseudobulbs are strong, and have been well ripened, they ought to produce flowers from every joint. When these plants arrive at this stage they require to be very carefully watered; in fact, very little, if any, will be required for another month, as a sudden saturation at the root just at this stage of development would most likely turn many of the embryo flowers into growths. Later batches of this section, and also the raceme-flowering kinds, such as D. thyrsiflorum, must be kept as quietly at rest as possible in a temperature of 50° to 55° with a dry atmosphere. There are not many Dendrobes that flower during the winter season, but D. bigibbum and D. superbiens—though not first-rate kinds—are worth growing for late autumn flowering, and these will be succeeded by D. macrophyllum, which is well worth growing. The next two months are the most critical in the year for any plants that are in growth, and any that are now in this state should be grown as quickly as is consistent with maintaining them in health. It is not difficult to detect at this season of the year whether a plant is getting attenuated through being subjected to too much heat and moisture. Where this is seen to be the case a slight reduction in the temperature should take place, which will produce better ripened growth. These remarks apply to such plants as Sobralias and the few Dendrobes that make their growth during the winter months. They are also applicable to imported Orchids of any kind that were started at the end of summer or early in autumn, and are now just getting into growth. These, in addition to being kept moving as quietly as possible, must be very carefully watered, otherwise some of the tender growths may get rotted, and thus throw the plants back for a couple of seasons. All the Aërides and Vandas will need close attention in the matter of watering during the dull season. Avoid keeping them either too wet or too dry at the root. The former

FIG. 126.—CYPRIPEDIUM INSIGNE, VAR. MAULEI. (SEE P. 717.)

CYPRIPEDIUM
VII.

Cypr. humile Sw.

FIG. 129.—CYPRIPEDIUM JAPONICUM (NAT. SIZE; FRONT AND SIDE VIEW OF COLUMN TWICE NAT. SIZE).

Cypr. Hookerianum Lindley

Cypripedium Irapeanum. Lave & Lexarca.

Bot. Mag. tab. 7178.

Cypriped. Klotzschianum Rchb. f.
of Veitch Manual Cypr. p. 63 & Linnaea 1852, p. 811.

54 (24) 1.

331.

Cypripedium. L.

Cypripedium hybridum „Frau Geheimrat Borsig."
(Insigne ♀ × Chamberlainianum ♂)

Chromolith. Emil Laue, Berlin

Cypripedium hybridum „Frau Geheimrat Borsig".

(Hierzu Tafel 1501.)

Wie wir bereits früher in Gartenflora mitgeteilt haben, ist von Herrn Kgl. Garteninspektor Weidlich im Borsig'schen Garten eine Kreuzung zwischen Cypripedium insigne und Chamberlainianum ausgeführt worden, die nach langjähriger Kultur der gewonnenen Sämlinge ein so gutes Resultat ergab, dass dem Herrn Weidlich vom V. z. B. d. G. ein Wertzeugnis dafür erteilt wurde (Gartenflora 1901 S. 648).

Inzwischen hat Herr Weidlich in Gartenflora 1902 S. 133 eine Beschreibung der Pflanze gegeben, die er zu Ehren von Frau Geh. Kommerzienrat Borsig benannte und wir können bei unserer heutigen Abbildung auf diese Beschreibung verweisen. — Wir sahen, dass bereits zwei Blüten am Stiele stehen; bei C. Chamberlainianum kommen bis 12 und mehr vor. Hoffentlich zeigt sich sein Einfluss mit dem Alter der Kreuzung immer mehr.

Vegetationsversuche mit Kohlrabi zur Erforschung der die Kopfausbildung dieser Pflanze beeinflussenden Nährstoffe.

Von Dr. Richard Otto in Proskau.

Bei den nachstehenden Versuchen, welche in veränderter Form noch fortgesetzt werden, suchte ich die Fragen zu beantworten:

1. Bilden in Sandkulturen gezogene Kohlrabipflanzen Köpfe oder nicht? Wenn nicht, woran liegt dies?

2. Welche Nährstoffe und in welchen Mengen hat man event. dieselben zu geben, um die Pflanzen zur Ausbildung grösstmöglichster und als Handelsware wertvoller Köpfe (bezw. anderer Organe) zu bringen?

Die von mir nach dieser Richtung hin in den Jahren 1889 und 1900 ausgeführten Vegetationsversuche (Sandkulturversuche) mit Kohlrabi*) hatten gezeigt, dass in Sandkulturen gezogene Kohlrabipflanzen es stets, selbst unter relativ ungünstigen Versuchsbedingungen (sehr kleine Versuchsgefässe) zur Kopfausbildung gebracht hatten, doch war dieselbe bei Verwendung entsprechend grösserer Kulturgefässe mit einem grösseren

*) Vergl. R. Otto, Arbeiten der chemischen Abteilung der Versuchsstation des Kgl. pomologischen Instituts zu Proskau I. Bericht; Botanisches Centralblatt Bd. 82 Nr. 10 und 11; II. Bericht; daselbst Bd. 86 Nr. 10; ferner Proskauer Obstbau-Zeitung 1902 S. 37 u. folg.

Bodenvolumen eine weit normalere als bei Benutzung kleinerer Gefässe mit geringerem Erdquantum.

Weiter hatten von mir ausgeführte Versuche hinsichtlich der zweiten Frage, welche Nährstoffe und in welchen Mengen man dieselben zu geben hat, um die Pflanzen zur Ausbildung grösstmöglichster und als Handelsware wertvoller Köpfe (event. auch anderer Organe) zu bringen, mit Sicherheit ergeben, dass gleichzeitig neben einer normalen Düngung (Volldüngung) eine verabfolgte starke einseitige Düngung mit den Nährstoffen Stickstoff, Phosphorsäure, Kali und Kalk direkt schädigend auf die Kopfausbildung einwirkt, indem nur sehr kleine Köpfe gebildet werden gegenüber den Pflanzen, welche die Normaldüngung allein erhalten hatten, und solchen, welche neben der Normaldüngung nur schwach einseitig mit Stickstoff, Phosphorsäure, Kali und Kalk gedüngt waren. —

Für das Versuchsjahr 1901 lautete nun die zu behandelnde Frage: „Welche Nährstoffe bewirken eine in jeder Beziehung gute Kopfausbildung der Pflanze und wie wird dieselbe durch die einzelnen Nährstoffe beeinflusst, resp. wie wirkt die neben der Volldüngung gegebene einseitige Düngung auf die Entwickelung und Ausbildung der ganzen Pflanze ein?“

Um eine noch bessere Kopfausbildung in den einzelnen Versuchsreihen zu erzielen als früher, erschien es angezeigt, bei den diesjährigen Versuchen sowohl die Normaldüngung als auch die einseitigen Düngungen um die Hälfte schwächer zu nehmen als bei den Versuchen des Jahres 1900 (s. l. c.).

Die Versuchsanstellung war demgemäss, ähnlich der der früheren Jahre, im wesentlichen folgende: Der schon im Vorjahr verwendete geglühte und äusserst nährstoffarme Seesand (bezogen von Dr. Th. Schuchardt in Görlitz) wurde mit Salzsäure und darauf wiederholt mit destilliertem Wasser bis zur neutralen Reaktion und Abwesenheit von Chlorverbindungen gewaschen, getrocknet und dann zu gleichen Teilen mit noch ungebrauchtem Seesand derselben Quelle gemischt. Dieser Sand hatte nach von mir angestellten Versuchen eine kapillare Hubhöhe des Wassers von 20 cm. Seine wasserhaltende Kraft betrug 27,1 pCt.

Als Versuchsgefässe dienten grosse, innen glasierte Blumentöpfe mit einem Abzugsloch am Boden; oberer Durchmesser derselben 30 cm, äussere Höhe 25 cm. Sie wurden mit einer Schicht Kieselsteine am Boden, darüber gelegter dünner Watteschicht, sowie einer an der inneren Seite der Töpfe befindlichen Glasröhre, welche zur Luftzirkulation diente, alle vor dem Einfüllen des Sandes auf das gleiche Gewicht von 5 kg gebracht.

Auf jedes dieser so vorbereiteten Kulturgefässe kamen dann 8 kg reiner trockener Seesand, der mit 1,25 l destilliertem Wasser gleichmässig angefeuchtet und in diesem Zustande locker in die Vegetationstöpfe eingefüllt wurde. Das Gewicht des gefüllten Gefässes betrug nunmehr 14,25 kg. Auf je 1 kg trockenen Seesandes wurde in diesem Jahre, wie schon oben erwähnt, die Hälfte der Konzentration der Nährstoffe der Sachs'schen Normallösung gegeben, es war somit die Konzentration der Nährstoffe in diesem Jahre um die Hälfte herabgesetzt gegenüber

Lycaste Eisgrubensis Kränzl.
Eisgrub 97.VI.
½ nat. Größe.

C. smaragdinum n.hybr

Lovt. Exsgnb 3.T 63.

Maxillaria sp

Lovt. Exsgnb 47 T 63

Award of Merit.

Sophro-Cattleya × 'Saxa,' Westonbirt variety (*S. grandiflora rosea* × *C. Trianaei*) (votes, unanimous), from Lieut.-Colonel G. L. Holford,

FIG. 123.—ODONTIODA × CHARLESWORTHII, GOODSON'S VARIETY. (*The Garden.* (P. cclviii.)

C.I.E., C.V.O. (gr. Mr. H. G. Alexander). Plant dwarf; flower three inches across; sepals and petals deep rose-purple; lip orange on the lower half, the front and margins of the side lobes claret-purple.

To *Laelio-Cattleya* × 'Golden Oriole,' Goodson's variety (*L.-C. Charlesworthii* × *C. Dowiana* 'Rosita') (votes, unanimous). Flowers golden-yellow heavily marked with deep bronzy-red.

To *Oncidium incurvum* (votes, 12 for, 6 against), from Baron Sir. H. Schröder, The Dell, Egham (gr. Mr. H. Ballantine). A graceful Mexican species which first flowered in England in 1840. Flower-spikes

Fig. 124.—Cypripedium × 'Actaeus Bianca.' (*Gardeners' Chronicle.*) (P. cclviii.)

four feet in length, branched, and bearing numerous white and rose flowers.

Botanical Certificate.

To *Catasetum maculatum*, from J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis). Flowers large, on erect spikes, fleshy, greenish, the lip and petals spotted with light purple.

To *Megaclinium colubrinum*, from Messrs. Sander. A singular species with flattened purple rachis, bearing on each side a row of small purple flowers.

Fig. 126.—Cypripedium Charlesworthii Bromilowianum. (*Journal of Horticulture.*)

Other Exhibits.

Lieut.-Col. G. L. Holford, C.I.E., C.V.O.: new hybrids.

C. J. Lucas, Esq.: *Laelio-Cattleya* × 'Dorothy Strachan' (*L. Dayana* × *C.* 'Eldorado').

Messrs. Heath: Cypripediums, Dendrobiums, &c.

Orchid Committee, October 27, 1908.

Mr. J. Gurney Fowler in the Chair, and twenty-five members present.

Awards Recommended :—

Gold Medal.

To Lieut.-Col. G. L. Holford, C.I.E., C.V.O., Westonbirt, for a magnificent group composed principally of hybrid Cattleyas raised at Westonbirt.

Silver-gilt Flora Medal.

To Messrs. Charlesworth, Hayward's Heath, for hybrids and rare species.

Silver Flora Medal.

To. H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. G. E. Day), for Cattleyas, Laelio-Cattleyas, &c.

To Messrs. Hugh Low, Enfield, a group of several white-flowered Cattleyas, &c.

To E. Ashton, Esq., The Broadlands, Camden Park, Tunbridge Wells (gr. Mr. Young), for well-grown Cattleyas, &c.

Silver Banksian Medal.

To J. S. Moss, Esq., Bishop's Waltham, for a group of *Cattleya Dowiana aurea.*

To Clement Moore, Esq., Hackersach, New Jersey, U.S.A., for cut spikes of white and coloured forms of *Cattleya labiata.*

First-class Certificate.

To *Vanda coerulea Charlesworthii* (votes, unanimous), from Messrs. Charlesworth, Hayward's Heath. A true albino, the flowers being pure white, without a trace of colour. (Fig. 127.)

Award of Merit.

To *Laelio-Cattleya* × 'Lustre' *gigantea* (*C. Luddemanniana* × *L.-C. callistoglossa*) (votes, unanimous), from Lieut.-Col. G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. H. G. Alexander). Plant dwarf; flower large and of firm substance; sepals and petals white, tinged and mottled with rose; lip large, claret-purple, lighter towards the front.

To *Laelio-Cattleya* × 'Ortrude' *superba* (*L. anceps* × *C. Dowiana aurea*) (votes, unanimous), from Lieut.-Col. G. L. Holford. A showy flower with cream-white sepals and petals, tinged with rose, and ruby-red lip with golden lines from the base.

To *Brasso-Cattleya* × 'Madame Hye' *superba* (*B. Digbyana* × *C. Harrisoniana*) (votes, unanimous), from Lieut.-Col. G. L. Holford. A finely formed flower, white tinged with lilac.

To *Brasso-Cattleya* × *Digbyano-Mossiae* 'Queen Alexandra,' Glenthorne variety (*B. Digbyana* × *C. Mossiae Wageneri*) (votes, unanimous), from Messrs. Wilson, Hayward's Heath. A large pure-white flower of fine shape.

Botanical Certificate.

To *Saccolabium dasypogon*, from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White). A dwarf species with short clusters of yellow flowers and white bearded lip.

To *Masdevallia Ortgiesiana*, from Sir Trevor Lawrence, Bart. A tufted plant with flowers an inch long on slender scapes, white with purple stripes.

Other Exhibits.

W. Waters Butler, Esq., Edgbaston: *Cattleya Hardyana alba*, Southfields variety, and *C. labiata.*

Messrs. Cypher: a group.

R. G. Thwaites, Esq. (gr. Mr. Black): hybrid Cattleyas.

Mrs. Joad, Worthing: *Renanthera coccinea.*

FIG. 129.—CYPRIPEDIUM × 'DREADNOUGHT.' (*Gardeners' Chronicle.*)

(*To face page* cclxviii.)

Botanical Certificate.

To *Oncidium micropogon*, from Gurney Wilson, Esq., Hayward's Heath. Allied to *O. barbatum*, but distinguished by the large clear yellow petals.

To *Coelogyne fuliginosa*, from Messrs. Armstrong & Brown, Tunbridge Wells. Flowers tawny yellow, with blackish fringed lip.

To *Bulbophyllum Careyanum*, from Messrs. Armstrong & Brown. Flowers red-brown, in dense racemes.

FIG. 130.—CYPRIPEDIUM 'ARETHUSA.' (*Journal of Horticulture.*) (P. cclxviii.)

Cultural Commendation.

To Mr. Bristow, gr. to Mrs. Temple, Leyswood, Groombridge, for a fine specimen of *Coelogyne barbata* with six spikes.

Other Exhibits.

J. Gurney Fowler, Esq. (gr. Mr. J. Davis): *Cymbidium* × 'Maggie Fowler,' and *Cypripedium* × 'Ernest Read.'

Mr. A. Mackellar, The Royal Gardens, Windsor: spikes of *Dendrobium formosum giganteum*.

Lieut.-Colonel G. L. Holford, C.I.E., C.V.O. (gr. Mr. H. G. Alexander): hybrid Cypripediums.

de B. Crawshay, Esq. (gr. Mr. Stables): a fine form of *Odontoglossum* × *waltoniense*.

F. Bostock, Esq., Northampton: *Cypripedium* × 'Actaeus' *springfieldiense*.

Monsieur Mertens, Ghent: hybrid Odontoglossums.

ORCHID COMMITTEE, DECEMBER 8, 1908.

Mr. J. GURNEY FOWLER in the Chair, and twenty-five members present.

Awards Recommended:—

Silver Flora Medal.

To Messrs. Charlesworth, Hayward's Heath, for a group.

To Messrs. Sander, St. Albans, for Cypripediums and Odontoglossums.

To H. J. Bromilow, Esq., Rainhill (gr. Mr. Morgan), for rare Cypripediums.

To Messrs. Armstrong & Brown, Tunbridge Wells, for Cypripediums.

To Messrs. Cypher, Cheltenham, for a group.

To Messrs. McBean, Cooksbridge, for Odontoglossums and Cypripediums.

Silver Banksian Medal.

To Messrs. Moore, Rawdon, Leeds, for a group.

To Messrs. Hugh Low, Bush Hill Park, for a group.

First-class Certificate.

To *Brasso-Cattleya* × *Cliftonii* (*B.-C. Digbyano-Mossiae* × *C. Trianaei*, Uplands var.) (votes, unanimous), from Messrs. Charlesworth, Hayward's Heath. Flower formed like *B.-C.* × *Digbyano-Mossiae*, but much larger, silver-white tinged with lavender, the fringed lip having purple markings at the base.

Award of Merit.

To *Dendrobium Coelogyne striatum* (votes, unanimous), from Mr. H. A. Tracy, Twickenham. Flowers yellow, striped with claret-red; lip blackish-purple. (Fig. 131.)

Cultural Commendation.

To Mr. Hunter, gr. to his Grace the Duke of Marlborough, for *Vanda coerulea*, with four spikes of flowers.

To Mr. H. Ballantine, gr. to Sir H. Schröder, for *Cypripedium insigne Sanderianum* with ten flowers.

Other Exhibits.

His Grace the Duke of Marlborough (gr. Mr. Hunter): *Cattleya* × 'Fabia,' Blenheim variety, and *C. Trianaei blenheimiensis*.

Lieut.-Col. G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. H. G. Alexander): *Cypripedium insigne*, Holford's variety, and a new *Laelio-Cattleya*.

num) (votes, unanimous), from G. F. Moore, Esq. (gr. Mr. Page). Dorsal sepal large, white with a green base; petals and lip greenish, the petals tipped with white.

To *Cypripedium* × *Thompsoni* (*villosum aureum* × 'Calypso') (votes, 10 for, 3 against), from G. F. Moore, Esq. Lower half of the dorsal sepal rose-purple, upper half white. Petals and lip yellowish tinged and veined with purple.

To *Cypripedium* × 'Graceæ,' var. 'W. H. Page,' (*niveum* × *Boxallii atratum*) (votes, unanimous), from G. F. Moore, Esq. Flowers white tinged with purple, the upper sepal having broad irregular lines of chocolate-purple.

Other Exhibits.

Baron Schröder (gr. Mr. Ballantine) showed a fine inflorescence of *Odontoglossum* × *elegans*, 'Eastwood Park variety,' and two forms of *Cypripedium* × *Lathamianum*.

M. C. Beranek, Paris, sent two hybrid Cypripediums.

J. Taylor, Esq., Reigate, exhibited fine spikes of *Dendrobium speciosum*.

H. T. Pitt, Esq. (gr. Mr. Thurgood), sent *Cypripedium Pittianum*.

Mr. Tracy, Twickenham, showed *Cattleya Trianæi* 'Bessie.'

De B. Crawshay, Esq. (gr. Mr. Stables), sent *Odontoglossum* × *Wilckeanum* 'Argus.'

M. Chas. Vuylsteke, Loochristi, Belgium, showed two fine *Odontoglossum* × *Wilckeanum*, and *O.* × *Vuylstekei*.

J. T. Bennett-Poë, Esq. (gr. Mr. Downes), again showed *Ipsea speciosa*, finely flowered.

H. Little, Esq. (gr. Mr. Howard), sent *Lycaste costata*.

Messrs. Jas. Veitch staged hybrids.

ORCHID COMMITTEE, FEBRUARY 23, 1904.

Mr. VEITCH in the Chair, and twenty-three members present.

Awards Recommended.

Silver-gilt Flora Medal.

To Sir Trevor Lawrence, Bart., Burford (gr. Mr. White), for rare Orchids.

To Jeremiah Colman, Esq., Gatton Park (gr. Mr. Bound), for Dendrobiums.

To Messrs. Sander, St. Albans, for Odontoglossums, Dendrobiums, and Cypripediums.

Silver Flora Medal.

To R. G. Thwaites, Esq., Streatham (gr. Mr. Black), for hybrids.

To Mr. Cypher, Cheltenham, for Dendrobiums and Cypripediums.

Silver Banksian Medal.

To Messrs. Jas. Veitch, for hybrids.

To J. Bradshaw, Esq., Southgate (gr. Mr. Whitelegge), for a group.

To Messrs. Hugh Low, for a group.

First-class Certificate.

To *Cypripedium* × *Beekmanii* (parentage uncertain, votes unanimous), from R. Briggs-Bury, Esq., Accrington (gr. Mr. Wilkinson). A massive flower, dorsal sepal emerald-green with white margin and many chocolate-purple spots. Petals and lip yellowish, marked and tinged with purple. (Fig. 119.)

Fig. 119.—Cypripedium × Beekmanii. (*Journal of Horticulture.*)

Award of Merit.

To *Cymbidium* × *Ballianium* (*eburneum* × *Mastersii*) (votes, unanimous), from Captain Holford, C.I.E., Westonbirt (gr. Mr. Alexander). Flowers as large as those of *C. eburneum*, but with more on a spike, as in *C. Mastersii*; white with yellow crest to the lip. The spike of the plant shown had four flowers.

To *Cymbidium Wilsoni* (votes, 11 for, 2 against), from Messrs. Jas. Veitch, Chelsea. A remarkable plant, in habit like a pigmy *C. gigantum*, but with flowers as large as that species and closely allied to it; the scape, however, is more slender and the labellum less downy; sepals and

Silver Banksian Medal.

To Lady Chichele Plowden, Aston Rowant (gr. Mr. Clark), for *Lælia anceps*, each plant with seven or eight spikes of flowers.

Award of Merit.

To *Lælia anceps Schröderæ* 'Theodora' (votes, 13 for, 2 against), from F. Wellesley, Esq., Westfield (gr. Mr. Hopkins). A handsome flower of the *L. a. Amesiana* class. Sepals and petals white, tinged with

Fig. 118.—Cypripedium × Morteni. (*Journal of Horticulture.*)

magenta-rose, darkest at the tips. Lip with yellow disc and dark lines on each side; front dark claret-purple. (Fig. 117.)

To *Lælio-Cattleya* × 'Myra' *Charlesworthii* (*L. flava* × *C. Trianæi*) votes, unanimous), from Messrs. Charlesworth. Flowers bright yellow; front of lip ruby-purple.

To *Cypripedium* × *Morteni* (*Leeanum Masereelianum* × *Chamberlainianum*) (votes, 14 for, 3 against), from W. M. Appleton, Esq., Weston-super-Mare. Habit of *C. Chamberlainianum*; flowers several on a spike; dorsal sepal green at the base with chocolate lines and white margin;

petals greenish, striped chocolate; lip rose colour with yellow margin. (Fig. 118.)

Other Exhibits.

Baron Schröder (gr. Mr. Ballantine) showed spikes of the purple-blotched *Odontoglossum Pescatorei Schröderianum*, *O. P. Veitchianum* and *O. crispum Stevensii*.

Lord Rothschild (gr. Mr. Hill) sent a spike of *Phalænopsis amabilis Rimestadiana*.

Geo. Singer, Esq., Coundon Court (gr. Mr. Collyer), showed hybrid Cypripediums.

J. Rutherford, Esq., M.P., Blackburn (gr. Mr. Lupton), sent *Odontoglossum* × *Hallio-crispum*.

C. J. Lucas, Esq. (gr. Mr. Duncan), sent *Cypripedium* × *Lathamianum* 'Warnham Court variety' and *C.* × 'Almos.'

W. M. Appleton, Esq., showed *Cypripedium* × *Edithiæ* and two others.

M. Chas. Vuylsteke, Ghent, sent *Odontoglossum* × *Vuylstekei* and *O.* × *loochristyense* varieties.

M. Jules Hye de Crom, Ghent, sent *Cypripedium* × 'Madame Jules Hye.'

Messrs. Hugh Low staged a group.

ORCHID COMMITTEE, FEBRUARY 9, 1904.

Mr. VEITCH in the Chair, and twenty-six members present.

Awards Recommended :—

Gold Medal.

To Messrs. Sander, St. Albans, for a very extensive group.

Silver Flora Medal.

To Norman Cookson, Esq., Oakwood, Wylam (gr. Mr. Chapman), for Odontoglossums.

To Messrs. Charlesworth, Bradford, for hybrids.

Silver Banksian Medal.

To G. F. Moore, Esq., Bourton-on-the-Water (gr. Mr. Page), for Cypripediums.

To Mr. Cypher, Cheltenham, for Dendrobiums and Cypripediums.

To Messrs. Hugh Low, for a group.

To Messrs. Williams, Holloway, for Cypripediums.

Award of Merit.

To *Cypripedium* × *aureum* 'Œdippe' (*Sallieri Hyeanum* × *Spiceria-num*) (votes, unanimous), from Captain Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), and Messrs. Charlesworth. A fine hybrid; upper sepal dark rose with a green blotch at the base and white margin. Petals and lip yellow marked with purple.

To *Cypripedium* × *aureum virginale* (*Sallieri Hyeanum* × *Spiceria*

Messrs. Heath, Cheltenham, staged a small group.

Sir Frederick Wigan, Bart. (gr. Mr. W. H. Young), showed *Chysis lævis superba*.

Jeremiah Colman, Esq., showed hybrid Dendrobiums.

Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White), sent fine specimens of *Dendrobium* × *Wiganiæ album* and other hybrids.

De B. Crawshay, Esq., again showed the very fine *Odontoglossum triumphans* 'Lionel Crawshay,' *O. t. Crawshayanum*, and *O.* × *Andersonium Youngi*.

ORCHID COMMITTEE, MARCH 20, 1906.

Mr. J. GURNEY FOWLER in the Chair, and twenty-eight members present.

Awards Recommended :—

Silver-gilt Flora Medal.

To Baron Sir H. Schröder, Bart., The Dell, Egham (gr. Mr. H. Ballantine), for a fine group of Orchids, including the rare *Odontoglossum Pescatorei Schröderianum* and *Veitchianum*.

To Messrs. Charlesworth, Bradford, for a fine group, including hybrid Odontoglossums.

Silver Flora Medal.

To Messrs. Jas. Cypher, Cheltenham, for a group of Dendrobiums, Odontoglossums, &c.

Silver Banksian Medal.

To Messrs. Sander & Sons, St. Albans, for a group.

To Messrs. Hugh Low, Enfield, for a group.

First-class Certificate.

To *Odontoglossum* × *Lambeauianum roseum* (*Rolfeæ ardentissimum* × *crispum* 'Madame Falcke') (votes, unanimous), from M. A. A. Peeters, Brussels. Flower large and with broad segments, pale rose, heavily blotched on the sepals and petals with rose-purple.

Award of Merit.

To *Cypripedium villosum* 'The Premier' (votes, unanimous), from Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins). A massive form, of thicker substance than typical *villosum*, and fine colour.

To *Lælio-Cattleya* × 'Sunray' var. *superba* (*L. cinnabarina* × *C. superba*) (votes, unanimous), from Messrs. Charlesworth. Flowers several on erect spikes, orange-colour, with crimson front to the labellum.

To *Cypripedium* × *aureum Hyeanum* (*nitens Sallieri Hyeanum* × *Spicerianum*) (votes, unanimous), from F. Menteith Ogilvie, Esq., The Shrubbery, Oxford (gr. Mr. Balmforth). A large greenish flower with chocolate-purple band up the dorsal sepal, and white upper half.

Cultural Commendation.

To Mr. W. H. White, Orchid-grower to Sir Trevor Lawrence, Bart., for *Phalænopsis Aphrodite*, with eighty flowers and buds on a branched spike.

Fig. 71.—Cypripedium villosum 'The Premier.'

Botanical Certificate.

To *Cycnoches Egertonianum viride*, from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White). A singular species with a long raceme of pale-green flowers.

Fig. 80.—Cypripedium × Harri-Leeanum, 'Park Lodge variety.' (*Gardeners' Chronicle*)

Cultural Commendation.

To Mr. H. G. Alexander (gr. to Major G. L. Holford, C.I.E., C.V.O.), for a fine example of *Odontoglossum* × *crispo-Harryanum*. The leading

bulb bore two spikes, 5 feet 6 inches in length, the one with twenty-four flowers, the other having eleven branches bearing forty-nine flowers.

To Mr. W. H. White (gr. to Sir Trevor Lawrence, Bart.), for *Platyclinis filiformis*, with about one hundred spikes.

Diploma Awards :—

Lælio-Cattleya × *elegans and hybrids.*

First Diploma: *Lælio-Cattleya* × *elegans Turneri*, from J. Gurney Fowler, Esq.

Second Diploma: *Lælio-Cattleya* × 'Berthe Fournier,' from Messrs Charlesworth.

Cattleya Warscewiczii and hybrids.

First Diploma: *Lælio-Cattleya* × *Nysa gloriosa*, from Jeremiah Colman, Esq.

Second Diploma: *Lælio-Cattleya* × *bletchleyensis*, from Jeremiah Colman, Esq.

Other Exhibits.

Sir Trevor Lawrence, Bart., showed a small group of rare Orchids.

J. Gurney Fowler, Esq. (gr. Mr. Davis), showed *Cattleya* × *Wavriniana* in fine condition, and other hybrids.

C. J. Lucas, Esq. (gr. Mr. Duncan), staged a small group of hybrids.

F. Du Cane Godman, Esq. (gr. Mr. Moody), sent *Satyrium carneum.*

M. Jules Hye de Crom, Ghent, showed *Miltonia* × *Hyeana* (× *Blenana* × *vexillaria Leopoldii*).

Orchid Committee, August 28, 1906.

Mr. J. Gurney Fowler in the Chair, and thirteen members present.

Awards Recommended :—

Silver-gilt Flora Medal.

To Messrs. Charlesworth, Bradford, for a group of hybrid Orchids.

Silver Flora Medal.

To Messrs. Sander, St. Albans, for a group in which fourteen spikes of *Arachnanthe Lowii* were displayed.

To Jeremiah Colman, Esq. (gr. Mr. Bound), for a group principally of *Lælio-Cattleya* × *Nysa.*

Silver Banksian Medal.

To R. I. Measures, Esq., Camberwell (gr. Mr. Smith), for a group.

To Messrs. Hugh Low, for a selection of Cattleyas &c.

To Messrs. Stanley, Southgate, for a group.

First-class Certificate.

To *Cattleya* × *Iris* 'Countess of Morley' (*bicolor* × *Dowiana aurea*) (votes, unanimous), from Major G. L. Holford, C.I.E., C.V.O. (gr. Mr.

Diploma Awards:—

Cypripedium Rothschildianum (*hybrids*).

First Diploma: To *Cypripedium* × *Fletcherianum*, from Messrs. Hugh Low.

Second Diploma: To *Cypripedium* × *A. de Lairesse* 'Westfield variety,' from Francis Wellesley, Esq.

Fig. 83.—Cypripedium × Fletcherianum. (*Gardeners' Chronicle.*)

Other Exhibits.

Major G. L. Holford, C.I.E., C.V.O. (gr. Mr. Alexander), showed several new hybrid Orchids.

Francis Wellesley, Esq. (gr. Mr. Hopkins), sent the singular *Epi-Cattleya* × 'Figaro' (*E. falcatum* × *C. intermedia*).

W. M. Appleton, Esq., Weston-super-Mare, sent hybrid Cypripediums.

Mr. H. Schuster, Brussels, showed a selection of Lælio-Cattleyas including *Lælio-Cattleya* × *bellula* (*L. pumila* × *C. maxima*).

ORCHID COMMITTEE, OCTOBER 9, 1906.

Mr. J. GURNEY FOWLER in the Chair, and twenty-one members present.

Awards Recommended:—

Silver Flora Medal.

To Messrs. Sander & Sons, St. Albans, for a group of hybrids &c.

FIG. 84.—CATTLEYA × 'MRS. J. W. WHITELEY,' 'ROSSLYN VARIETY.'
(*Journal of Horticulture.*)

Silver Banksian Medal.

To R. I. Measures, Esq., Camberwell (gr. Mr. Smith), for a group.

To Messrs. Heath & Sons, Cheltenham, for Dendrobiums and Cypripediums.

To *Cattleya* × *Marstersoniæ superba* (*Loddigesii* × *labiata*) (votes, 12 for, 2 against), from Messrs. J. W. Moore, Ltd., Rawdon, Leeds. Originally flowered by Messrs. Veitch in 1878. Flowers deep rose colour.

Fig. 85.—Cypripedium × 'Germaine Opoix,' 'Westfield variety.' (*Journal of Horticulture.*)

Botanical Certificate.

To *Epidendrum floribundum*, from Sir Trevor Lawrence, Bart. Sepals and petals greenish ; lip white with purple spots.

To *Mormodes Buccinator*, var. *theiochlorum*, from Sir Trevor Lawrence, Bart. (gr. Mr. White). A form with greenish flowers tinged with brown on the sepals.

To *Maxillaria nigrescens*, from Miss E. Willmott, Warley Place (gr. Mr. Gooch). Flowers with narrow segments, reddish-purple.

Cultural Commendation.

To Mr. G. G. Whitelegge (gr. to J. Bradshaw, Esq.), for a very large specimen of *Cattleya* × *Mantinii*.

To Mr. W. H. White (gr. to Sir Trevor Lawrence, Bart.), for a fine specimen of *Angræcum distichum*.

To Messrs. Sander & Sons, for *Cymbidium Tracyanum magnificum* with five spikes.

To Messrs. McBean, Cooksbridge, for *Cattleya Bowringiana* with twenty spikes.

Diploma Awards:—

Cattleya labiata.

First Diploma: To *Cattleya labiata*, 'Captain J. F. Laycock,' from Captain Laycock.

Second Diploma: To *Cattleya labiata* 'Hector,' from J. Bradshaw, Esq.

Cattleya labiata (*hybrids*).

First Diploma: To *Cattleya* × *Fabia Bradshawiæ*, from J. Bradshaw, Esq.

Second Diploma: To *Cattleya* × *Fabia*, 'Fowler's variety,' from J. Gurney Fowler, Esq.

Sophronitis grandiflora (*hybrids*).

First Diploma: To *Sophro-Cattleya* × *eximia*, from J. Gurney Fowler, Esq.

Dendrobium Phalænopsis.

First Diploma: To *Dendrobium Phalænopsis* 'Miss Louisa Dean,' from G. F. Moore, Esq.

Other Exhibits.

Sir Trevor Lawrence, Bart., sent hybrid Cattleyas.

The Marquis de Wavrin sent *Cattleya* × 'Adrienne de Wavrin' (*maxima* × *Warscewiczii*).

Mr. Mertens, Ghent, sent hybrid Orchids.

Messrs. Hugh Low & Co. staged a group.

Messrs. Stanley Ashton & Co. showed a collection of Cattleyas &c.

Francis Wellesley, Esq., showed *Cypripedium* × 'Sheba,' 'Westfield variety' (*Harrisianum superbum* × *triumphans*). A fine dark hybrid, and others.

Jeremiah Colman, Esq., staged a selection of *Cattleya labiata* and hybrids.

ORCHID COMMITTEE, NOVEMBER 20, 1906.

Mr. J. GURNEY FOWLER in the Chair, and twenty-one members present.

Awards Recommended:—

Silver-gilt Flora Medal.

To Messrs. Charlesworth & Co., Heaton, Bradford, for a group of hybrid Orchids.

To Messrs. J. Cypher & Sons, Cheltenham, for a group of Cypripediums.

Silver Flora Medal.

To Messrs. Sander & Sons, St. Albans, for a good group.

Fig. 86.—Cypripedium × Leeanum 'Corona. (*Journal of Horticulture.*)

Bronze Banksian Medal.

To Messrs. Hugh Low & Co., Enfield, for a group.

First-class Certificate.

To *Cattleya* × *Fabia Goodsonii* (*labiata* × *Dowiana aurea*) (votes, unanimous), from H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. G. E.

Day). A very fine form with large magenta-rose flowers with ruby-crimson lip. The specimen bore two spikes of four and five flowers respectively.

Award of Merit.

To *Cypripedium* × *Leeanum* 'Corona' (*insigne* var. × *Spicerianum*) (votes, unanimous), from G. F. Moore, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Page). A fine form with large white dorsal sepal, bearing some purple lines and a green base.

To *Cypripedium* × 'Stephanos' (*Pollettianum* × *œnanthum superbum*) (votes, unanimous), from the Rev. J. C. B. Fletcher, Mundham Vicarage, Chichester. Upper sepal white, with a green base and some feathered purple lines; petals and lip yellow, heavily tinged with brownish-purple.

Other Exhibits.

The Hon. Walter Rothschild, M.P. (gr. Mr. Dye), sent *Cattleya* × *Germania inversa*.

Francis Wellesley, Esq., Westfield (gr. Mr. Hopkins), sent several new hybrid Orchids.

Leopold de Rothschild, Esq. (gr. Mr. Hudson), showed the white *Vanda cærulea albens*.

Major G. L. Holford, C.I.E., C.V.O., Westonbirt (gr. Mr. Alexander), showed the fine white *Cattleya labiata Amesiana* with five flowers on one spike.

J. Bradshaw, Esq., Southgate (gr. Mr. Whitelegge), sent *Odontoglossum* × *amabile Charlesworthii*.

From the Royal Horticultural Society's Gardens, Wisley, four forms of *Cypripedium* × *Euryades* were shown.

W. M. Appleton, Esq., Weston-super-Mare, sent *Cypripedium* × *Leeanum Appletonianum*.

M. Chas. Maron, Brunoy, France, showed two white forms of *Cattleya* × *Fabia*.

M. Mertens, Ghent, staged a small group.

Diploma Awards.

Cypripedium Fairrieanum.

First Diploma: To *Cypripedium Fairrieanum*, dark variety (Sander).

Cypripedium Fairrieanum (hybrids).

First diploma: To *Cypripedium* 'Germaine Opoix,' 'Westfield var.' (*C.* × 'Madame Coffinet' × *C. Fairrieanum*), from Francis Wellesley, Esq. (gr. Mr. Hopkins). The fine hybrid which secured a **F.C.C.** November 6.

To *Cypripedium* × 'Baron Schröder' *punctatum* (*œnanthum superbum* × *Fairrieanum*), from Francis Wellesley, Esq.

ORCHID COMMITTEE, DECEMBER 11, 1906.

Mr. HARRY J. VEITCH in the Chair, and nineteen members present.

Awards Recommended :—

Gold Medal.

To G. F. Moore, Esq., Chardwar, Bourton-on-the-Water (gr. Mr. Page), for a very fine group of Cypripediums &c.

Lindley Medal.

To Mr. C. J. Salter, gr. to Mrs. Haywood, Reigate, for eighteen large specimens of *Masdevallia tovarensis*, each with over one hundred spikes of white flowers.

Silver Flora Medal.

To Jeremiah Colman, Esq., Gatton Park (gr. Mr. Bound), for a group of Cypripediums and Calanthes.

To Messrs. Jas. Cypher & Sons, Cheltenham, for a fine group of Cypripediums.

To Messrs. Heath & Sons, Cheltenham, for a group of Cypripediums.

Silver Banksian Medal.

To Messrs. Sander & Sons, St. Albans, for a group.

To Messrs. J. W. Moore, Ltd., Rawdon, for a group.

Bronze Banksian Medal.

To R. I. Measures, Esq., Camberwell (gr. Mr. Smith), for a group.

First-class Certificate.

To *Cattleya* × *Dusseldorfei* 'Undine' (*intermedia alba* × *Mossiæ Wageneri*) (votes, unanimous), from Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. Alexander). A pure white variety of good size.

To *Cypripedium* × *Actæus langleyense* (*insigne Sanderæ* × *Leeanum giganteum*) (votes, unanimous), from Major G. L. Holford, C.I.E., C.V.O. The variety raised by Messrs. Veitch, and to which an **A.M.** was given January 23, 1900. Flowers large, dorsal sepal pure white, with a small green base and a few purple lines.

To *Cypripedium* × *Troilus eboraicum* (*insigne* 'Harefield Hall' × *nitens* variety) (votes, 11 for, 4 against), from J. H. Craven, Esq., J.P., Keighley (gr. Mr. Corney). Flowers closely resembling *C. insigne* 'Harefield Hall.'

To *Cœlogyne Mooreana* (votes, unanimous), from Messrs. Sander & Sons, St. Albans. A fine flower, pure white with yellow disc and papillæ on the lip, and as large as *C. cristata.*

Award of Merit.

To *Cymbidium* × *Wiganianum*, 'Westonbirt variety' (*eburneum* × *Tracyanum*) (votes, unanimous), from Major G. L. Holford. Flowers ivory-white, with dotted lines of light purple.

To *Brasso-Lælia* × 'Mrs. M. Gratrix,' 'Westfield variety' (*B. Digbyana* × *L. cinnabarina*) (votes, unanimous), from Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins). Flowers of an almost uniform reddish-orange colour.

Fig. 87.—Cypripedium × eboraicum. (*Journal of Horticulture.*)

To *Dendrobium Phalænopsis*, 'Gatton Park variety' (votes, unanimous), from Jeremiah Colman, Esq., Gatton Park (gr. Mr. Bound). Flowers white, with a slight slate-blue tint and veining of the same colour on the lip.

To *Odontoglossum* × *amabile* 'Glebelands variety' (*crispum* × *crispo-Harryanum*) (votes, unanimous), from J. Gurney Fowler, Esq.,

Fig. 68.—Cypripedium Boxallii nigricans.

Award of Merit.

To *Lælio-Cattleya* × 'Myra,' Burford variety (*L. flava* × *C. Trianæi*) (votes, unanimous), from Sir Trevor Lawrence, Bart. Flowers bright yellow, with claret crimson lip.

To *Cattleya Trianæi*, 'Westonbirt variety' (votes, unanimous), from Major G. L. Holford, C.I.E., C.V.O. Sepals and petals blush-white; front of lip purple,with narrow lavender margin.

To *Cypripedium Boxallii nigricans* (votes, unanimous), from Francis Wellesley, Esq., Westfield (gr. Mr. Hopkins). The darkest form of the species. Dorsal sepal blackish purple, with white margin.

To *Dendrobium* × *Brodiei* (*Dominianum* × *Wiganiæ*) (votes, unanimous), from Jeremiah Colman, Esq. (gr. Mr. Bound). Flowers white, shaded with rose; disc light purple.

To *Dendrobium* × 'Othello Colossus' (parentage unrecorded) (votes, unanimous), from Jeremiah Colman, Esq. Resembling a very large *Ainsworthii* with the lip claret-colour, with rose margin.

To *Spathoglottis* × *Colmani* (*aureo-Veillardi* × *aurea*, 'Gatton Park variety'). Flowers yellow spotted with crimson; side lobes and tip of labellum crimson.

To *Lycaste Skinneri Fascinator* (votes, unanimous), from F. Menteith Ogilvie, Esq., Oxford (gr. Mr. Balmforth). A large white flower tinted with rose.

To *Lycaste costata* (votes, unanimous), from H. S. Goodson, Esq., Putney (gr. Mr. Day). Flowers cream-white; lip fringed.

To *Cymbidium* × *eburneo-giganteum* (*eburneum* × *giganteum*) (votes, 12 for, 4 against), from Messrs. Charlesworth. Flowers formed like *C. giganteum* but larger, cream-white, marked with light red.

To *Lælia anceps Fascinator* (votes, unanimous), from Messrs. McBean, Cooksbridge. A very large finely coloured flower, resembling the variety *Chamberlainiana*, but with a purple feather on the outer halves of the petals.

To *Cypripedium* × *Edithiæ Rowena* (*Chamberlainianum* × *bellatulum*) (votes, unanimous), from W. M. Appleton, Esq. Flower light purple densely spotted with claret colour.

To *Cypripedium* × 'G. F. Moore' var. *punctatissimum* ('Mrs. Wm. Mostyn' × *nitens Sallieri aureum*) (votes, unanimous), from G. F. Moore, Esq. Flower greenish yellow tinged purple, the dorsal sepal blotched with chocolate purple; upper part white.

Diploma Awards:—

Cattleya Trianæi.

First Diploma: To *Cattleya Trianæi* 'The Premier,' from J. Bradshaw, Esq.

Second Diploma: To *Cattleya Trianæi*, 'Westonbirt variety,' from Major G. L. Holford.

Lælia anceps (*white varieties*).

First Diploma: To *Lælia anceps Schröderiana*, from Major G. L. Holford, C.I.E., C.V.O., Baron Sir H. Schröder, Bart., and Jeremiah Colman, Esq.

JANUARY 9, 1906.

Mr. J. GURNEY FOWLER in the Chair, and twenty-two members present.

Awards Recommended :—

Silver Flora Medal.

To F. Menteith Ogilvie, Esq., Oxford (gr. Mr. Balmforth), for a group of Orchids.

FIG. 64.—CYPRIPEDIUM × ALCIBIADES MAGNIFICUM. (*Gardeners' Chronicle.*)

To Messrs. Sander for a group of Orchids.

To Messrs. J. Cypher for a group of Cypripediums, *Lælia anceps*, &c.

Silver Banksian Medal.

To C. J. Lucas, Esq., Horsham (gr. Mr. Duncan), for a group of Orchids.

To Messrs. Hugh Low, for a group of Orchids.

To Messrs. Stanley, Southgate, for Cattleyas &c.
To M. Charles Vuylsteke, Ghent, for hybrid Odontoglossums.

First-class Certificate.

To *Cypripedium* × *Alcibiades magnificum* (*Leeanum giganteum* × 'Mons. de Curte') (votes, unanimous), from Major G. L. Holford, C.I.E.,

Fig. 65.—Cypripedium × 'Bella,' Westfield variety.

C.V.O., Westonbirt (gr. Mr. Alexander). Flowers large; dorsal sepal white, with a green base and purple dotted lines; petals and lip yellow, tinged and marked with purple-brown.

ORCHID COMMITTEE.

By an unfortunate mistake the four following figures of Orchids exhibited by F. Wellesley, Esq., were omitted from the Proceedings of the Orchid Committee for 1905, *namely :—*

Cypripedium × *memoria Jerninghamiæ*, **A.M.** January 3, 1905. Journal R.H.S. vol. xxxi. p. clvii.

Cypripedium × *westfieldiense*, **A.M.** January 3, 1905. Journal R.H.S. vol. xxxi. p. clviii.

Lælio-Cattleya × *Charlesworthii magnifica*, **A.M.** January 24, 1905. Journal R.H.S. vol. xxxi. p. clvix.

Lælia × *Iona nigrescens*, **A.M.** February 28, 1905. Journal R.H.S. vol. xxxi. p. clx.—Editor.

Fig. 60.—Cypripedium × memoria Jerninghamiæ, **A.M.**

FIG. 61.—CYPRIPEDIUM × WESTFIELDIENSE, A.M.

Rainhill, Lancashire (gr. Mr. Morgan). Dorsal sepal large, white with dotted rose lines. Petals and lip yellowish tinged and marked with purple. (Fig. 82.)

Other Exhibits.

Lieut.-Col. G. L. Holford, C.I.E., C.V.O.: new hybrid *Cypripedium*.

Fig. 81.—Anguloa Cliftonii. (*Journal of Horticulture.*)

Mrs. Norman C. Cookson: *Odontioda* × *Bradshawiae*, Cookson's variety.

H. S. Goodson, Esq.: Odontoglossums.

R. G. Thwaites, Esq.: *Odontioda* × *Charlesworthii*.

Francis Wellesley, Esq.: *Cypripedium* × *Wellesleyae* (' Venus ' × *insigne* ' Harefield Hall ').

H. J. Bromilow, Esq.: rare Cypripediums.

R. Brooman White, Esq.: *Cypripedium insigne Sanderae* from seed.

FIG. 82.—CYPRIPEDIUM × 'LORD WOLMER.' (*Gardeners' Magazine.*) (p. lxii.)

Mr. A. W. Jensen: *Odontoglossum crispum* 'Irene.'

Monsieur Mertens, Ghent: Odontoglossums.

Flowers of a uniform purplish rose colour. Lip blush-white with rose lines.

Award of Merit.

To *Dendrobium* × 'Venus' 'Cookson's variety' (*Falconeri* × *nobile*) (votes, 18 for, 3 against), from Norman C. Cookson, Esq. Flowers white, with the outer halves of the segments dark rose. Disc of lip maroon, with orange-coloured band.

To *Odontoglossum* × *Lucasianum heatonense* (? *Hallii* × *cristatellum*) (votes, 8 for, 1 against), from Baron Schröder (gr. Mr. Ballantine).

Fig. 48.—Cypripedium × 'Dom Carlos' superbum. (*Journal of Horticulture.*)

Sepals and petals purplish-chocolate, tipped and edged with yellow. Lip cream-white, spotted with brown around the crest.

To *Zygopetalum* × *Crawshayanum* (*xanthinum* × *stapelioides*) (votes, unanimous), from De B. Crawshay, Esq. (gr. Mr. Stables). Flowers 2½ inches across, yellow, with a greenish tint, and profuse spotting of purplish red.

Botanical Certificate.

To *Polystachya Haroldiana* from Norman C. Cookson, Esq. Sent from the neighbourhood of Lake Tanganyika, by Mr. Harold Cookson.

Habit dwarf. Flowers five on a short spike, white, tinged with green on the sepals.

Cultural Commendation.

To Mr. May (gr. to J. B. Joel, Esq., Potter's Bar), for a very large specimen of *Cypripedium Rothschildianum* with three spikes, each of five flowers and one bud.

Other Exhibits.

The Right Hon. Lord Rothschild (gr. Mr. Dye) sent the finely coloured *Lælia purpurata*, 'Tring Park variety.'

The Right Hon. Lord Auckland (gr. Mr. Matthews) showed cut spikes of *Lissochilus Krebsii.*

Francis Wellesley, Esq. (gr. Mr. Hopkins), sent *Lælia purpurata* 'Mrs. R. A. H. Mitchell,' *Cattleya Skinneri* 'Minnie,' *Cypripedium Lawrenceanum* 'Majestas,' and *Lælio-Cattleya* × *Lucia* 'Westfield variety.'

Messrs. Hugh Low staged a small group.

Messrs. John Cowan showed *Odontoglossum crispum* 'Edith Bolton.'

John S. Moss, Esq., sent a good spotted *Odontoglossum crispum.*

Orchid Committee, Temple Show, May 30, 1905.

Mr. N. C. Cookson in the Chair, and twenty-seven members present.

[For the Cups and Medals awarded by the Council, see page xxiii].

Awards Recommended :—

First-class Certificate.

To *Cattleya citrina maxima* (votes, unanimous), from the Marquis de Wavrin, Somerghem, Belgium (gr. M. de Geest). Flowers very large, rich yellow, fragrant.

To *Zygopetalum Ballii* (votes, unanimous), from Elijah Ashworth, Esq., Harefield Hall (gr. Mr. Holbrook). Probably a natural hybrid of *Zygopetalum rostratum*, and resembling the garden hybrid *Z.* × *Roeblingianum.* Flowers white, with purple markings up each of the segments, and at the base of the lip. (Fig. 49.)

To *Odontoglossum* × *amabile* 'Ixion' (*Harryano-crispum* × *crispum*) (votes, unanimous), from M. Chas. Vuylsteke, Loochristy, Ghent. A fine blush-white flower, with reddish-rose markings on the sepals and petals. (Fig. 50.)

Award of Merit.

To *Odontoglossum* × *Lawrenceanum* 'Adonis' (*triumphans* × *Rolfeæ*) (votes, unanimous), from M. Chas. Vuylsteke. A fine yellow flower, heavily barred with chocolate-purple. Lip white, with purple marks around the crest.

To *Odontoglossum* × *loochristyense* 'Arddarroch variety' (*crispum* × *triumphans*) (votes, unanimous), from R. Brooman-White, Esq., Garelochhead, N.B. Flowers large, the basal ground-colour of the segments whitish, the apical halves yellow, both colours blotched with chestnut brown.

Botanical Certificate.

To *Brassavola Perrinii*, from Sir Trevor Lawrence, Bart. Leaves terete, flowers with narrow greenish sepals and petals and white lip.

To *Bulbophyllum radiatum* from Sir Trevor Lawrence, Bart. A small tufted plant with umbels of slender white flowers.

To *Epidendrum pterocarpum* from Sir Trevor Lawrence, Bart. Sepals and petals greenish brown; lip white, with purple lines on the extended side lobes.

Cultural Commendation.

To Mr. W. H. White, orchid-grower to Sir Trevor Lawrence, Bart., for *Brassavola Perrinii* with many fragrant flowers.

To Mr. Luckhurst, gr. to Sir John Edwards-Moss, Henley-on-Thames, for a finely flowered specimen of *Lycaste Deppei*.

Other Exhibits.

Francis Wellesley, Esq. (gr. Mr. Hopkins), sent *Cypripedium Sanderæ* allied to *C. concolor*; *Cattleya Mossiæ* 'Miss Ethel Harting,' and *Lælio-Cattleya* × 'Mrs. Reginald Brade' (*C. Schröderæ* × *L.-C.* × *Aphrodite*).

R. Brooman-White, Esq., showed cut *Odontoglossum crispum*.

R. Briggs-Bury, Esq., Accrington (gr. Mr. Wilkinson), showed *Cypripedium Lawrenceanum Hyeanum*, 'Bank House variety,' a strong grower with large flowers.

W. A. Bilney, Esq., Weybridge, showed *Dendrobium Dalhousieanum*, 'Fir Grange variety,' a sulphur-yellow flower, with claret blotches on the lip.

ORCHID COMMITTEE, JULY 4, 1905.

Mr. J. GURNEY FOWLER in the Chair, and sixteen members present.

Awards Recommended:—

First-class Certificate.

To *Cymbidium Huttonii* (votes, unanimous), from Messrs. Charlesworth, Bradford. A reintroduction of the Java plant to which a Special Certificate was given May 5, 1868, the plant having then been collected by H. Hutton for Messrs. Veitch. The species connects *Cymbidium* and *Grammatophyllum*, the large grooved two- to three-leafed pseudo-bulbs much resembling *G. multiflorum*. The pendulous racemes are produced like *Cymbidium Devonianum*, ten- to fifteen-flowered. Flowers about 2 inches across, yellowish, densely spotted with purple, the petals also tinged with dark purple on the outer halves. Two forms were shown, the one darker than the other in colour.

To *Cypripedium* × 'Daisy Barclay' (*Godefroyæ leucochilum* × *Rothschildianum*) (votes, unanimous), from J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. J. Davis). A handsome dwarf, large-flowered species, with extended ivory-white petals bearing numerous claret-purple lines. Upper sepal white, with broad dotted lines of claret-purple; labellum ivory-white, with purple spotting on the face.

To *Cypripedium Lawrenceanum Hyeanum* 'Bank House variety' (votes, 13 for, 1 against), from R. Briggs-Bury, Esq., Bank House, Accrington (gr. Mr. Wilkinson). A very free-growing variety, with broader dorsal sepal than the original form. Sepals white, with emerald-green lines. Petals and lip emerald-green.

Award of Merit.

To *Cypripedium Godefroyæ citrinum* (votes, 13 for, 1 against), from Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins). A fine

Fig. 53.—Cypripedium Godefroyæ citrinum.

large pale-yellow flower, with a broad irregular network of claret colour on the upper sepal and petals. (Fig. 53.)

To *Lælio-Cattleya* × *Massangeana* 'Harry Goodson' (*L. tenebrosa* × *L.-C.* × *Schilleriana*) (votes, unanimous), from H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. Day). Sepal and petals yellowish, tinged and veined with brownish-rose; lip white at the base; side lobes and front purplish-crimson.

To *Oncidium crispum* 'Shrubbery variety,' from F. Menteith

ORCHID COMMITTEE, AUGUST 29, 1905.

Mr. GURNEY FOWLER in the Chair, and thirteen members present.

Awards Recommended :—

Silver-gilt Flora Medal.

To Messrs. Charlesworth, Bradford, for a fine group of hybrid Orchids.

FIG. 54.—LÆLIO-CATTLEYA × 'BERTHE FOURNIER, WESTONBIRT VARIETY.'
(*Journal of Horticulture.*)

Bronze Banksian Medal.

To Messrs. Stanley, Southgate, for a selection of Brazilian Orchids.

Award of Merit.

To *Miltonia vexillaria* 'The Dell variety' (votes, unanimous), from Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine). Flowers

white, tinged with purplish rose, and with purple lines radiating from the base of the lip; five inches in diameter.

To *Lælio-Cattleya* × 'Issy' var. *cuprea* (*L. tenebrosa* × *C. Leopoldii*) (votes, 6 for, 2 against), from Messrs. Charlesworth. Habit of *L.-C.* × *elegans*. Sepals and petals reddish-copper colour; base of lip white, front rich reddish-purple.

To *Miltonia* × *Binotii* 'Gabriel's variety' (nat. hyb. *candida* × *Regnellii*) (votes, 7 for, 0 against), from C. B. Gabriel, Esq., Easdale, Horsell, Surrey (gr. Mr. Hillier). Sepals and petals cream-yellow, barred with brown; lip violet-purple.

Fig. 55.—Cypripedium Godefroyæ leucochilum 'Goodson's Variety.' (*Journal of Horticulture.*)

To *Cypripedium Godefroyæ leucochilum* 'Goodson's variety' (votes, unanimous), from H. S. Goodson, Esq., Fairlawn, Putney (gr. Mr. G. Day). Flowers large, pale yellow, with a broad claret-coloured reticulation on the sepals and petals. (Fig. 55.)

Other Exhibits.

Francis Wellesley, Esq. (gr. Mr. Hopkins), showed *Cypripedium* × 'Princess' *superbum* ('Mons. Coffinet' × *Fairrieanum*) and *C. concolor Sanderæ*.

ORCHID COMMITTEE, OCTOBER 24, 1905.

Mr. GURNEY FOWLER in the Chair, and nineteen members present.

Awards Recommended :—

Silver-gilt Flora Medal.

To Baron Sir H. Schröder, The Dell, Egham (gr. Mr. Ballantine), for a fine group of Orchids.

To Jeremiah Colman, Esq., Gatton Park, Reigate (gr. Mr. Bound), for a large group of Cypripediums, Lælias, &c.

To Messrs. Charlesworth, Bradford, for a group of hybrid Orchids.

Silver Flora Medal.

To Messrs. Stanley, Southgate, for a group.

First-class Certificate.

To *Oncidium corynephorum* Lindl. (votes, unanimous), from Elijah Ashworth, Esq., Harefield Hall, Wilmslow (gr. Mr. Holbrook). A beautiful species, shown for the first time. Habit of *O. serratum* and bearing a long, flexuose, branched inflorescence of many flowers. Flowers about $1\frac{1}{2}$ inch across. Sepals and petals broadly ovate and nearly equal, rose-purple, with broad white margin. Lip broad, as large as the petals, reddish-purple, base yellowish. Shown as *O. Leopoldianum.*

Award of Merit.

To *Cypripedium* × 'Germaine Opoix' ('Madame Coffinet' × *Fairrieanum*) (votes, unanimous), from Francis Wellesley, Esq. (gr. Mr. Hopkins). Dorsal sepal large, green at the base, white above, bearing many dotted purple lines. Lip and petals yellowish, tinged with purple. (Fig. 58.)

To *Cymbidium* × 'Maggie Fowler' (*giganteum* × *e'egans*) (votes, unanimous), from J. Gurney Fowler, Esq., Glebelands, South Woodford (gr. Mr. Davis). Flowers nearest to *C. giganteum*, but more numerous, cream-white, with close lines of red-brown on the sepals and petals and blotches of the same colour on the lip.

To *Cattleya* × 'Lord Rothschild' 'Fairy Queen' (*Gaskelliana alba* × *Dowiana aurea*) (votes, unanimous), from Messrs. Charlesworth. Flowers white, with orange disc to the lip and an irregular band of rose-purple in front.

To *Cypripedium* × 'Lord Ossulston' (*Leeanum virginale* × *Charlesworthii album*) (votes, unanimous), from the Right Hon. the Earl of Tankerville, Chillingham Castle, Northumberland. Dorsal sepal large, pure white, with small green base. Petals and sepals pale green, slightly tinged with rose.

To *Cattleya* × 'Marie Henriette de Wavrin' (*Loddigesii* × *Rex*) (votes, unanimous), from the Marquis de Wavrin, Château de Ronsele, Belgium (gr. M. De Geest). Flowers cream-white, with orange-coloured disc to the lip, in front of which is a narrow purple blotch.

To *Masdevallia cucullata* (votes, unanimous), from Jeremiah Colman, Esq. (gr. Mr. Bound). A fine species, with chocolate-purple flowers, each with a hooded green bract.

To *Dendrobium Phalænopsis* 'Miss Louisa Deane' (votes, unanimous), from G. F. Moore, Esq. (gr. Mr. Page). Flowers blush-white, with pale rose markings on the lip.

To *Lælio-Cattleya* × 'Clive' *superba* (*L. pumila præstans* × *C. Dowiana aurea*) (votes, 10 for, 2 against), from W. M. Appleton, Esq., Weston-super-Mare. Sepals and petals rose colour. Lip large, claret colour, with gold veining at the base.

Fig. 58.—Cypripedium × 'Germaine Opoix.'

Botanical Certificate.

To *Epidendrum tricolor*, from Sir Trevor Lawrence, Bart. (gr. Mr. White). A singular species, of the habit of *Barkeria* and with a long raceme of closely arranged small cream-white flowers with red labellums.

To *Seraphyta multiflora*, from Sir Trevor Lawrence, Bart. Flowers numerous on branched spikes, greenish. Often called *Epidendrum diffusum*.

R. Briggs-Bury, Esq. (gr. Mr. Wilkinson), sent *Odontoglossum* × 'Vuylstekei variety.'

Francis Wellesley, Esq. (gr. Mr. Hopkins), showed *Lælio-Cattleya* × 'Miss Gilberta Blount' (*L.-C.* × *Ingrami* × *C.* × *Mantini*), *L.-C.* × *Norba superba*, *Cypripedium* × 'Abraham Lincoln' ('Niobe' × *orphanum*), and other Orchids.

De B. Crawshay, Esq. (gr. Mr. Stables), sent *Odontoglossum* × *crispo-dinei* (*crispum* × *Coradinei*).

Fig. 61.—Cypripedium × triumphans. (*Journal of Horticulture.*)

Norman C. Cookson, Esq., showed *Lælia* × 'De Geestiana' (*flava* × *Jongheana alba*) with white sepals and petals.

F. M. Ogilvie, Esq., Oxford (gr. Mr. Balmforth), showed *Cattleya* × *Portia magnifica*.

R. I. Measures, Esq., Camberwell (gr. Mr. Smith), showed a selection of cut spikes of hybrid Orchids.

Messrs. Cowan, Gateacre, showed a fine white *Cattleya labiata* with pale-rose lip.

Messrs. William Bull, Chelsea, showed varieties of *Cattleya* × *Iris*, *Odontoglossum crispum* and others.

ORCHID COMMITTEE, NOVEMBER 21, 1905.

Mr. H. J. VEITCH in the Chair, and eighteen members present.

Awards Recommended:—

Silver Flora Medal.

To Messrs. Charlesworth, Bradford, for a group of hybrid Orchids.
To M. Chas. Vuylsteke, Loochristy, Ghent, for hybrid Odontoglossums.
To Messrs. Jas. Veitch, Chelsea, for a group.

Silver Banksian Medal.

To Messrs. Low, Enfield, for a selection of Cypripediums, Cattleyas, &c.
To Messrs. Stanley, Southgate, for a group.

First-class Certificate.

To *Cypripedium* × 'The Baron' (*Hitchensiæ* × *nitens* 'Sander's variety') (votes, unanimous), from Messrs. Sander, St. Albans. Dorsal sepal white, spotted with dark rose and with a green base. Petals and lip yellowish, tinged and marked with purple.

Award of Merit.

To *Disa pulchra* 'Tring Park variety' (votes, unanimous), from the Right Hon. Lord Rothschild, Tring Park (gr. Mr. A. Dye). Inflorescence a foot in height and bearing ten pale-lilac pink flowers bearing a resemblance to those of a gladiolus. Native of Griqualand East, South Africa.

To *Mormodes Badium* (votes, unanimous), from the Right Hon. Lord Rothschild. The type plant, bearing an erect inflorescence of ruby-red flowers. The yellow variety was shown from Tring Park, January 12, 1897, and was voted an Award of Merit.

To *Cypripedium* × *Thalia giganteum* (*insigne Chantinii* × 'Baron Schröder') (votes, 9 for, 3 against), from Francis Wellesley, Esq., Westfield, Woking (gr. Mr. Hopkins). Dorsal sepal broader and rounder than in any previously shown; white, with a green base and many spotted lines of rose-purple colour. (Fig. 62.)

To *Cattleya* 'Mrs. Pitt' var. *magnifica* (*Harrisoniana* × *Dowiana aurea*) (votes, 12 for, 2 against), from Major G. L. Holford, Westonbirt (gr. Mr. Alexander). Sepals and petals rose-pink; lip orange, darkest in the centre.

To *Odontoglossum* × *Hallio-crispum Theodora* (*Hallii* × *crispum roseum*) (votes, unanimous), from De B. Crawshay, Esq., Rosefield, Sevenoaks (gr. Mr. Stables). Flowers equal to a good *O. crispum*, primrose-yellow, spotted with red-brown.

To *Odontoglossum* × *Phœbe* (*cirrhosum* × *crispum*) (votes, unanimous), from Messrs. Charlesworth. Flowers nearest to those of *O. cirrhosum*, but with broader and shorter segments; white, tinged with pink and evenly spotted with reddish-brown.

Cypripedium × *Actæus chardwarense* (*insigne* × *Leeanum*) (votes, unanimous), from G. F. Moore, Esq., Bourton-on-the-Water (gr. Mr. Page). Flowers nearest to *C. insigne*; greenish, with white upper half to the dorsal sepal, which has a green base and some purple blotches.

Botanical Certificate.

To *Dendrobium striatum*, from Sir Trevor Lawrence, Bart. (gr. Mr. W. H. White). A singular species imported with *D. Victoria Regina*

Fig. 62.—Cypripedium × Thalia giganteum.

from the Philippines. Flowers an inch across, segments lanceolate, whitish, with well-defined red lines.

To *Disa pulchra*, from the Right Hon. Lord Rothschild. Inflorescence erect, flowers gladiolus-like, rose-pink.

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Other Exhibits.

Francis Wellesley, Esq., showed several hybrid Cypripediums, and *Lælio-Cattleya*.

Sir Frederick Wigan, Bart. (gr. Mr. W. H. Young), sent a fine *Brasso-Cattleya* × *heatonensis* and *Cypripedium* × *Marjorie* (*insigne sylhetense* × *Leeanum superbum*).

H. S. Goodson, Esq., Putney (gr. Mr. Day), staged a small collection of Orchids.

Messrs. Sander showed *Lælio-Cattleya* × 'The Duchess' (*L.-C.* × *Hippolyta* × *C.* × *Hardyana*).

Mons. L. Cappe, Le Vesinet, France, sent *Lælio-Cattleya* × *Schneideri* (*L.-C.* × *Amelia* × *C. Dowiana aurea*).

ORCHID COMMITTEE, DECEMBER 5, 1905.

Mr. GURNEY FOWLER in the Chair, and fifteen members present.

Awards Recommended:—

Gold Medal.

To Baron Schröder, The Dell, Egham (gr. Mr. Ballantine), for a very fine group of rare Orchids.

Silver-gilt Flora Medal.

To Messrs. Cypher, Cheltenham, for a group of Cypripediums, &c.

Silver Flora Medal.

To Messrs. Charlesworth, Heaton, Bradford, for a group of hybrid Orchids.

First-class Certificate.

To *Vanda Sanderiana* 'Chillingham variety' (votes, unanimous), from the Right Hon. the Earl of Tankerville, Chillingham Castle, Northumberland (gr. Mr. Hunter). Flowers large and nearly circular, light rose on the upper half, and beautifully tinged and veined with reddish-purple on the lower part.

To *Odontoglossum* × *Smithii* (*Rossii rubescens* × *crispo-Harryanum*) (votes, unanimous), from Messrs. Charlesworth. A charming hybrid with flowers of good size. Sepals and petals white in the middle, banded and tipped with rose-purple and evenly spotted with chocolate-purple. Lip elongated and slightly twisted, rose-purple, with a yellow crest on a white base. (Fig. 63.)

To *Lælio-Cattleya* × *Epicasta* 'Gatton Park variety' (*C. Warscewiczii* × *L. pumila præstans*) (votes, unanimous), from Jeremiah Colman, Esq., Gatton Park (gr. Mr. Bound). Flower equal in size to *Cattleya Mendelii* and of fine form. Sepals and petals blush-white, with a slight yellowish tinge at the margin. Lip purplish-crimson in front, pale yellow at the base.

To *Odontoglossum* × *eximium* 'King of England' (*ardentissimum* × *crispum*) (votes, unanimous), from Monsieur Chas. Vuylsteke. Sepals and petals white, with the inner parts of the segments claret colour.

To *Odontoglossum caeruleum* (parentage unrecorded) (votes, unanimous). Flowers white, heavily blotched with light violet. (Fig. 38.)

Award of Merit.

To *Cattleya Mossiae* 'Princess of Wales' (votes, unanimous), from Major G. L. Holford, C.I.E., C.V.O. (gr. Mr. H. G. Alexander). A noble form of typical *C. Mossiae* with very large flowers of fine colour.

Fig. 37.—Cypripedium tibeticum. (*Journal of Horticulture.*)

To *Odontoglossum Thompsonianum superbum* (*Edwardii* × *crispum*). Flowers claret-colour edged and tipped with rose. From W. Thompson, Esq.

To *Brasso-Laelio-Cattleya* × 'Lido' (*B. Digbyana* × *L.-C.* 'Henry Greenwood') (votes, unanimous), from Monsieur Chas. Maron, Brunoy, France.

Cultural Commendation.

To Mrs. Stonyforth, Kirk Hammerton Hall, Yorkshire, for an enormous plant of *Dendrobium thyrsiflorum* with over fifty spikes.

To Mr. W. P. Bound, gr. to Jeremiah Colman, Esq., Gatton Park, for *Odontoglossum crispum* 'Mary Colman,' with three spikes.

To Messrs. Armstrong & Brown, Tunbridge Wells, for a finely flowered *Odontoglossum naevium.*

Other Exhibits.

Major G. L. Holford, C.I.E., C.V.O., staged one of the finest groups ever seen at the Temple Show, and secured the Veitchian Cup.

Messrs. Sander & Sons had a group covering 200 square feet.

Messrs. Charlesworth & Co. staged a similar group.

Jeremiah Colman, Esq. (gr. Mr. Bound), staged an extensive group.

Messrs. William Bull & Sons had a group of Cattleyas, Laelias, &c.

Messrs. Hugh Low & Co., Enfield, staged an effective group.

Fig. 38.—Odontoglossum caeruleum. (*Journal of Horticulture.*)

H. S. Goodson, Esq., Putney (gr. Mr. Day), had a select group.

Messrs. Jas. Cypher & Sons, Cheltenham, staged a fine group of *Miltonia vexillaria* and other Orchids.

Mr. Robson, Altrincham, showed a selection of Odontoglossums.

J. Rutherford, Esq., Beardwood, Blackburn (gr. Mr. Lupton), showed white Cattleyas.

Francis Wellesley, Esq. (gr. Mr. Hopkins), sent *Cattleya Mossiae* 'Miss Mary Knollys,' a fine variety.

Messrs. Jas. Veitch & Sons showed two of their new *Brasso-Catt-Laelia* × *Veitchii* and the fine white *C. Mossiae* 'Rosalind.'

H. L. Bischoffsheim, Esq. (gr. Mr. Doig), had a fine display of *Cattleya Mossiae* and *Laelia purpurata.*

R. Ashworth, Esq., Manchester (gr. Mr. Pidsley), staged a selection of *Odontoglossum crispum.*

(gr. Mr. Alexander). Flowers partaking strongly of *C. granulosa*, green with whitish, distinctly trilobed lip which is striped with purple, and has both the front and side lobes fringed.

To *Cattleya* × 'Maggie Raphael' *alba* (*Trianaei alba* × *Dowiana aurea*) (votes, unanimous), from Major G. L. Holford. Sepals and petals white, lip rose-crimson veined with gold.

To *Phaio-Calanthe* × *Colmanii* Phaius × ('Norman' × *Calanthe Regnieri Stevensi*) (votes, unanimous), from Jeremiah Colman, Esq., Gatton Park (gr. Mr. Bound). Flowers white with a slight green tint on the sepals, and a few purple lines at the base of the lip.

Other Exhibits.

Francis Wellesley, Esq., Westfield, Woking, showed *Cypripedium Aeson giganteum* in fine condition, and other hybrids.

Major G. L. Holford showed several new hybrids.

De B. Crawshay, Esq., sent *Odontoglossum crispum Poultoni* and *O.* × 'Queen Alexandra.'

J. Wilson Potter, Esq., sent *Laelia cinnabarina* × *Jongheana.*

Mr. H. A. Tracy showed *Cypripedium xanthimum* (*Leeanum* × *insigne* variety).

Messrs. Hugh Low & Co. staged a group.

Messrs. Heath & Sons, Cheltenham, showed hybrid Cypripediums.

J. Gurney Fowler, Esq., sent Cypripedium × 'Ernest Read' (parentage unrecorded).

Messrs. Linden, Brussels, showed two beautiful blotched forms of *Odontoglossum crispum* raised from seeds.

M. Jules Hye de Crom, Ghent, sent Cypripedium × *Lathamianum primatum.*

M. Mertens, Ghent, showed various Orchids.

Messrs. Sander & Sons sent three fine forms of *Vanda Sanderiana.*

ORCHID COMMITTEE, JANUARY 22, 1907.

Mr. J. GURNEY FOWLER in the Chair, and twenty-four members present.

Awards Recommended.

Silver Flora Medal.

To Major G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. H. G. Alexander), for an elegant arrangement of White *Laelia anceps.*

To F. Du Cane Godman, Esq., South Lodge, Horsham, for a group of fine specimens of *Lycaste Skinneri.*

To Messrs. Jas. Cypher & Sons, Cheltenham, for a group of Cypripediums &c.

To Messrs. Charlesworth & Co., Bradford, for a group of hybrid Orchids.

To Messrs. Sander & Sons, St. Albans, for a group of hybrids and interesting species.

To Monsieur Chas. Vuylsteke, Ghent, for a selection of hybrid Odontoglossums.

Silver Banksian Medal.

To Messrs. Jas. Veitch & Sons, Chelsea, for a group.

To G. Singer, Esq., Coventry (gr. Mr. Collyer), for cut spikes of *Phalaenopsis* and hybrid Cypripediums.

Fig. 26.—Cypripedium Tautzianum nigricans. (*Journal of Horticulture.*)

To Messrs. J. McBean & Son, Cooksbridge, for Odontoglossums and *Laelia anceps.*

To Messrs. Armstrong & Brown, Tunbridge Wells, for hybrid Cypripediums.

To Mr. F. C. Young, St. Albans, for hybrid Cypripediums.

Award of Merit.

To *Cypripedium* × *Tautzianum nigricans* (*barbatum nigrum* × *niveum*) (votes, unanimous), from Francis Wellesley, Esq., Westfield,

FIG. 161.—CYPRIPEDIUM × 'MRS. F. SANDER. (p. cclxxv.)

(*To face page* cclxxv.)

ORCHID COMMITTEE, NOVEMBER 23, 1909.

Mr. HARRY J. VEITCH, V.M.H., in the Chair, and twenty-one members present.

Awards Recommended :—

Silver Flora Medal.

To Messrs. Jas. Veitch, Chelsea, for Cypripediums.
To Messrs. Charlesworth, Haywards Heath, for hybrids.

Silver Banksian Medal.

To Messrs. Stuart Low, Bush Hill Park, for a group.
To Messrs. Cypher, Cheltenham, for Cypripediums.
To Messrs. McBean, Cooksbridge, for a group.

First-class Certificate.

To *Laeliocattleya* × 'Barbarossa,' Westonbirt variety (*C. Trianaei* 'Imperator' × *L.-c.* × *callistoglossa*) (votes, 14 for, 1 against), from Lieut-Col. G. L. Holford. Resembling *L.-c.* × *callistoglossa ignescens*, but of thicker substance. Sepals and petals magenta-rose ; lip ruby-red with a yellow disc.

To *Cypripedium* × *Boltonii* (parentage unknown) (votes, unanimous), From W. Bolton, Esq. In form nearest to *C.* × 'Venus,' but larger ; pure white with a few minute blackish dots at the base of the dorsal sepal. (Fig. 159.)

To *Cirrhopetalum longissimum* (votes, unanimous), from Sir Trevor Lawrence, Bart., K.C.V.O. A very remarkable species, said to have been imported from Siam. The slender scape bore at the apex, a very short raceme of seven flowers drooping almost in an umbel. The flowers, which were nearly nine inches in length, were white with rose-coloured lines. (Fig. 160.)

Award of Merit.

Cattleya × 'Dirce' *superba* (× 'Vulcan' × *Warscewiczii*) (votes, unanimous), from Lieut.-Col. G. L. Holford, C.I.E., C.V.O. (gr. Mr. H. G. Alexander). Flowers deep rosy-mauve, the lip being the darker.

To *Zygocolax* × *Charlesworthii* (*Z.* × *Perrenoudii* × *C. jugosus*) (votes, 15 for, 1 against), from Messrs. Charlesworth. Sepals and petals cream-white, closely barred with chocolate purple. Lip violet with white margin.

Botanical Certificate.

To *Bulbophyllum hirtum*, from Mr. Gurney Wilson, Haywards Heath. A small Burmese species with a pendulous raceme of small white hairy flowers.

Other Exhibits.

Lieut-Col. G. L. Holford, C.I.E., C.V.O. : several hybrids.

Francis Wellesley, Esq. ; Cypripediums and *Laeliocattleya* × 'King Manoel.'

Mrs. Cookson : white *Calanthe* × *Cooksoniae*.
H. S. Goodson, Esq. : hybrid Cattleya.

Fig. 159.—Cypripedium × Boltonii. (p. cclxxi.)

Monsieur Mertens : Odontoglossums.
J. Gurney Fowler, Esq. : *Cypripedium* × ' Ville de Paris.'

To Messrs. Charlesworth, Haywards Heath, for hybrids.
To Messrs. Sander, St. Albans, for a group.
To Messrs. Stuart Low, Bush Hill Park, for a group.

Fig. 158.—Cypripedium × 'Cynthia,' Westonbirt var. (*From Gardeners' Magazine.*) (p. cclxviii.)

Silver Banksian Medal.

To Messrs. J. Cypher, Cheltenham, for a group.

First-class Certificate.

To *Cattleya* × *Hardyana* 'The Baron' (*Dowiana aurea* × *Warscewiczii* 'Frau Melanie Beyrodt') (votes, unanimous), from H. S. Goodson, Esq.

(gr. Mr. G. E. Day). Sepals and petals white. Lip like *C. Warscewiczii*, ruby-crimson, with a light yellow blotch on each side of the tube. (Fig. 157.)

Award of Merit.

To *Dendrobium taurinum Colmanii* (votes, unanimous), from Sir Jeremiah Colman, Bart. (gr. Mr. Collier). Sepals white, reflexed, petals longer and narrower, erect, twisted, rose-pink; lip large, white with rose margin. Philippine Isles.

To *Cirrhopetalum Fascinator* (votes, unanimous), from Sir Jeremiah Colman, Bart., V.M.H. Allied to *C. appendiculatum*, but larger. Upper sepal and petals greenish, striped and fringed with purple; lower sepals closely approached, six inches long, ending in slender blades, the basal part broad, whitish with purple warted centre.

To *Cypripedium* × 'Cynthia' (*Charlesianum* × *Charlesworthii*) (votes, 16 for, 4 against), from Lieut.-Col. G. L. Holford, C.I.E., C.V.O. (gr. Mr. H. G. Alexander). Dorsal sepal white with thin dotted lines of rose. Petals and lip greenish, tinged with purple. (Fig. 158.)

To *Cypripedium* × *Faire-Maude* (*Fairrieanum* × *Maudiae*) (votes, 12 for, 3 against), from Mrs. N. C. Cookson, Oakwood, Wylam (gr. Mr. H. J. Chapman). Resembling a large, dark *C.* × 'Juno,' with a very fine dark rose-tinted and striped dorsal sepal.

Other Exhibits.

Lieut.-Col. G. L. Holford: hybrid Orchids.

Sir Jeremiah Colman, Bart., V.M.H: rare species.

Ed. Rogerson, Esq., Manchester: *Cypripedium* × 'Priam.'

Baron Sir H. Schröder: *Cattleya* × Lamberhurst hybrid (*intermedia* × *citrina*).

H. T. Pitt, Esq.: *Cattleya* × *newingtonense* ('Mrs. W. J. Whiteley' × *Harrisoniana*).

Monsieur Mertens: hybrid Odontoglossums.

W. Thompson, Esq.: two hybrids.

F. Menteith Ogilvie, Esq.: *Sophrocattleya* × 'Doris.'

R. Brooman-White, Esq.: Odontoglossums.

Mr. A. W. Jensen: *Odontoglossum Harryanum.*

Messrs. Armstrong & Brown: Laeliocattleyas.

J. Forster Alcock, Esq.: *Cypripedium* × 'Baron Schröder,' var. New-Hall-Hey.

ORCHID COMMITTEE, OCTOBER 26, 1909.

Mr. J. GURNEY FOWLER in the Chair, and nineteen members present.

Awards Recommended:—

Gold Medal.

To Lieut.-Col. G. L. Holford, C.I.E., C.V.O., Westonbirt, Tetbury (gr. Mr. H. G. Alexander), for a magnificent group, principally hybrid Cattleyas raised at Westonbirt, among which were sixty plants of

CYPRIPEDIUM × LEEANUM VEITCH VARIETATES

A. Goossens pinx.

J. Goffart chrom.

PL. DXV-DXVI

CYPRIPEDIUM × LEEANUM VEITCH VARIETATES

CYPRIPEDIUM DE M. LEE, VARIÉTÉS DIVERSES

CYPRIPEDIUM. Vide *Lindenia*, I, p. 17.

Cypripedium × *Leeanum*. Descript., vide *Lindenia*, III, p. 61.

Cypripedium × *Leeanum* VEITCH in *Gard. Chron.*, n. ser. XXI, p. 50 (1884), XXIII, p. 277 (1885, — *var. superbum*); *Man. Orchid. Pl.*, part. IV, p. 88 (1889). — *L'Orchidoph.*, 1884, p. 55; 1885, pp. 2 et 238, cum tab. col.; 1886, p. 137; 1889, p. 85; 1891, p. 3. — PYNAERT in *Rev. de l'Hort. Belg.*, XI, p. 231, fig. 34 (1885). — *Gard. Chron.*, n. ser., XXV, p. 168 (1886); ser. 3, IV, p. 663 (1888, — *var. maculatum*), V, p. 11 (1889 — *var. Maesereelianum*). — WILLIAMS, *Orch. Alb.*, V, tab. 223 (1886); *Orch. Grow. Man.*, edit. 7, p. 275 (1894). — *Lindenia*, III, tab. 125 (1887). — WATSON and BEAN, *Orchids*, p. 186, fig. 48 (1890). — PUCCI *Cyprip.*, p. 134 (1891). — *Reichenbachia*, ser. 2, II, p. 19, tab. 57 (*var. giganteum*). — *Gard. Mag.*, 1892, p. 48, cum ic. — *Gard. and For.*, VI, p. 117 (1893, — *var. ampliatum*). — L. LIND., *Les Orchid. exot.*, p. 712 (1894). — *Journ. des Orch.*, VI, p. 381 (1896).

Cypripedium × *Maesereelianum* HORT.; *Illustr. Hortic.*, 1889, p. 23, tab. 77.

Cypripedium × *Vallerandi* HORT.; *Lindenia*, V, p. 100 (1889, — nomen tantum).

Cypripedium × *Engelhardtae* L. LIND. in *Lindenia*, VI, p. 93, tab. 285 (1890).

Paphiopedilum × *Leeanum* STEIN, *Orchideenb.*, p. 474 (1892).

Cypripedium × *Albertianum* HORT. J. HYE; *Rev. de l'Hort. Belg.*, XIX, p. 3, tab. 1 (1893). — *Journ. des Orchid.*, III, p. 346 (1893).

P phiopedium × *Albertianum*, *P.* × *Engelhardtae*, *P.* × *Leeanum*, *P.* × *Maesereelianum* et *P.* × *Vallerandi* (*Valerandi*) KERCH., *Livre des Orchid.*, pp. 475, 478, 480, 481 et 484 (1894).

Cypripedium × *Yvonnae* HORT.; *Illustr. Hort.*, XLII, p. 23, tab. 26 (1895). — *Journ. des Orchid.*, VI, p. 382 (*C.* × *Ivonnae*, — 1896).

Que deviendra dans un certain nombre d'années l'étude de la famille des Orchidées, et spécialement celle de certains groupes, comme par exemple le genre Cypripedium, si non seulement on en introduit encore constamment des espèces et des variétés nouvelles, mais surtout si l'on continue à pratiquer quotidiennement les croisements les plus variés entre les formes déjà connues? La plupart des types primitifs que tout le monde s'accordait à considérer comme spécifiquement distincts, se trouveront reliés par tant d'intermédiaires, qu'il deviendra impossible d'établir entre eux des lignes de démarcation bien précises, du moins en ce qui concerne les plantes cultivées.

Un exemple remarquable de ces variations presque indéfinies nous est fourni par le *Cypripedium* × *Leeanum*, dont la splendide planche double ci-jointe reproduit quelques-unes des formes les plus remarquables qui ont fleuri récemment dans les serres de L'HORTICULTURE INTERNATIONALE.

On sait que le *C. Leeanum*, qui a déjà été décrit et figuré en 1887 dans la *Lindenia* (vol. III, pl. 125), est issu du croisement des *C. insigne* et *C. Spicerianum*, deux espèces certainement assez voisines, mais que tous les botanistes considèrent comme parfaitement distinctes. Pour faire mieux ressortir ce que chaque forme

de l'hybride a emprunté à ses deux parents, notre planche montre la fleur de ceux-ci dans le petit encadrement de droite : la fleur supérieure est celle du *C. Spicerianum;* l'inférieure est la forme ordinaire du *C. insigne.*

Voici comment on peut résumer les caractères distinctifs de ces deux espèces :

Le *C. insigne* a les feuilles d'un vert pâle, la bractée aussi longue que l'ovaire, le sépale supérieur largement ovale-arrondi, à fond vert sauf la bordure et de nombreuses macules pourpres, l'inférieur plus grand que le labelle, les pétales grands, à bords un peu ondulés, vaguement marqués d'assez nombreuses lignes longitudinales d'un brun pourpré, le staminode presque quadrangulaire, jaunâtre, avec un fort callus vers le centre.

Le *C. Spicerianum* est notablement plus petit dans toutes ses parties, surtout la fleur; les feuilles sont d'un vert foncé; la bractée est beaucoup plus courte que l'ovaire; le sépale supérieur est très large, obovale-rhomboïde, blanc avec une veine centrale d'un beau pourpre, et l'inférieur est notablement plus petit; les pétales sont relativement plus petits, assez crépus, avec une seule ligne médiane pourpre; le staminode est arrondi, ondulé, d'un pourpre violet et bordé de blanc.

Si nous comparons avec leurs parents les sept formes de *C. Leeanum* que représente notre planche, nous voyons que dans toutes, on retrouve plus ou moins la trace de la bande médiane pourpre du sépale supérieur et des pétales du *C. Spicerianum;* la plupart ont aussi sur le sépale supérieur les petites macules pourprées du *C. insigne;* deux d'entre elles ont le sépale supérieur plus arrondi de ce dernier; les autres l'ont plus obovale, comme le premier. La première forme à gauche dans la rangée inférieure est celle qui se rapproche le plus du *C. Spicerianum;* mais la forme du sépale supérieur et le staminode font surtout sentir l'influence du *C. insigne.* La teinte des quatre suivantes rappelle un peu plus cette dernière espèce. Quant aux deux d'en haut, celle de droite ressemble assez, par sa teinte dorée, à la variété qui a été nommée *C.* × *Engelhardtae*, mais son sépale supérieur est beaucoup moins maculé; celle de gauche, remarquable par son extrême ampleur, est fort voisine du *C.* × *Yvonnae.* Toutes sont des plantes d'une beauté hors ligne.

A. C.

Tab. 6492.

Cypripedium Lawrenceanum.

Scaule v. caulesc. fol. pauc. distich. lin.-ellipt. acut. plan. viridi-G. albo-lepidot, scapo tomentos. purpur. 1-2 flor. Flore magno. sep. dorsali orbiculat. amplo rubacuto alb. purp. villato, villis basin versus verruc. lateralib. paruis. in laminam angustam lin.-oblong. concav. obtus. deflex. labello breviore ovali. pet. plan. horizontalib. late-linear. ciliat. versus marginem verruc. nitid. ciliat. purp. ornato; labello subcylindr. apice rotundato fusco-purpureo, ore parum ampliato, antherae sterili lunata cuspidib. incurv. acut. margine interiore fisso.

Bot. J. Gard. etc. 1878 II p. 748.

Flower of C. barbatum. foliage of C. Fayanum Stemless or with the stem a foot high. Leaves distichous nearly 1' long including the broad flattened sheath linear-elliptic acute, 2" broad, nearly flat, grooved down the centre in front, & keeled at the back, about 12 nerved. Sheathed with bright greenish white & dull green. Scape longer than the leaves. flexuous, 1-2 flowered, clothed with long spreading glandular hairs as are the bract, ovary, & back of the sepals. Bract small, oblong, obtuse. Flower erect, upwards of 5" across the petals, & as much from the lip

of the dorsal sepal to that of the lip. Dorsal sepal very large, orbicular, rather ~~than the~~ broader above the middle, white with broad purple alternately long & shorter bands, the latter narked towards the base, none of them reaching the lip; margins very slightly revolute below the middle; lateral sepals combined into a brown oblong obtuse concave ribbed lamb much shorter than the lip. Petals straight, flat, 2½" long & 1½" broad, oblate green, dull purple towards the obovate tips, with a series of 6 or 8 purple vanished hairy warts along each margin & a few on the disk beyond the middle. Lip dull purple, 2" long subcylindrical, ventricose below the middle mouth slightly dilated, emarginate in front. Staminode lunate with acute incurved cusps & 5 teeth in the sinus, cleft with a narrow sinus at the back. F. D. H.

Cypripedium Lawrenceanum. Rchb f.
Borneo.

Cypripedium villigerum Rbr. f

Fitch. del. **CYPRIPEDIUM LEANUM.** Chromo: P. Stroobant, Gand.

flore des serres IV t 345.

Cypripedium Lowii. Lindl.

Borneo. Sarawak.

Cypripedium Macfarlanei
Kräuzlin.
= C. calophyllum ♀ × C. Spicerianum ♂
R. H. Measures. Streatham. August 1891.

Orchid Alb. IX tab. 418.

Cypripedium Marshallianum Rchb. f.

L. Reeve & Co. London.

Cypriped. Masterstianum.

Bot. Mag. tab 7319.

Cypripedium montanum Douglas
ex Lindl. Orch. p. 528.

Gard. Chron. 1877. I. 727 June

Cypripedium occidentale. ?
Rocky Mts.

CYPRIPEDIUM MORGANIÆ

Cÿpriped. insig. Nilsoni.

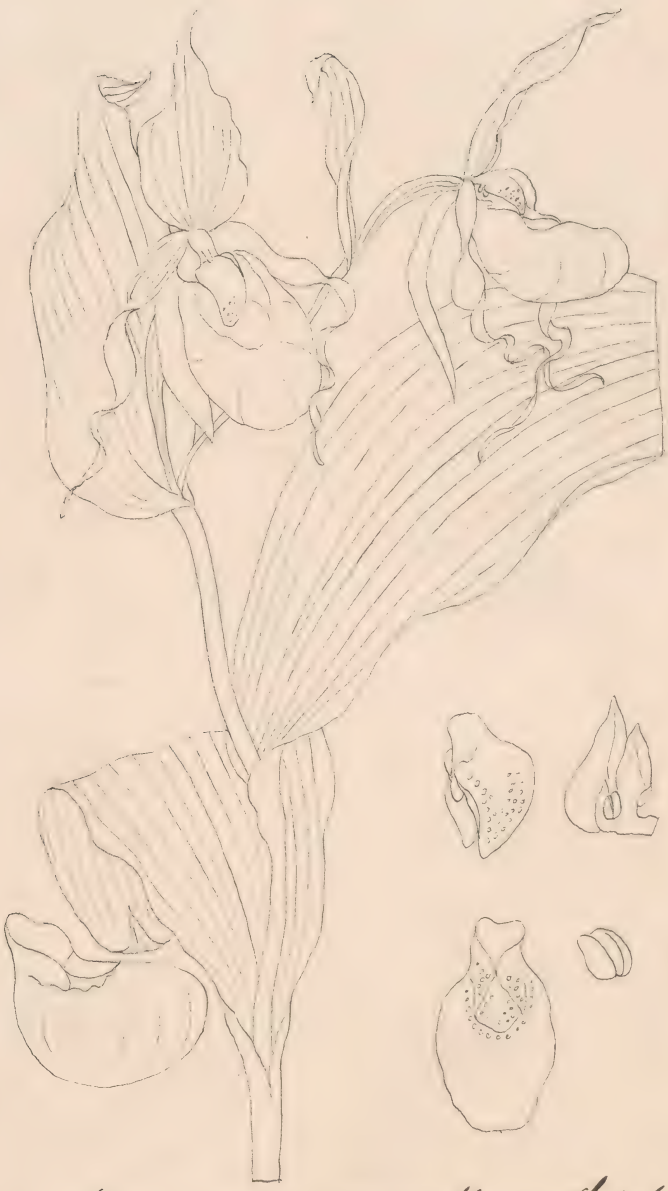
Cÿprip.
Önanthum superb.
[var. Fürstenbergi.]

CYPRIPEDIUM
1

P. Sutton Smith. del

C. parviflorum Sw.

Bot. Mag. 3024.



Cypripedium parviflorum. Salisb.
Nord Amerika.

Hooker. Fl. Bor. Americ II t. 216.

Cypripedium parviflorum

Hook. Fl. Bor. Am. II t 266.
1
2
3.
4.
Cypripedium passerinum
Richards.

CYPRIPEDIUM

Cypripedium pubescens Willd

Tab. 254.
2/5

Cypripedium Roebelini $\frac{1}{1}$

Taf. ~~2 Hft.~~ 2 5

Cypripedium Roebelini $\frac{1}{2}$.

M.S. del, J.N. Fitch lith.

Vincent Brooks Day & Son Imp.

L. Reeve & Co. London

Selenipedium Sargentianum Rolfe.
Orch. Rev. I. 239.

Orch. Sanderiana Album. t. 6. 196.

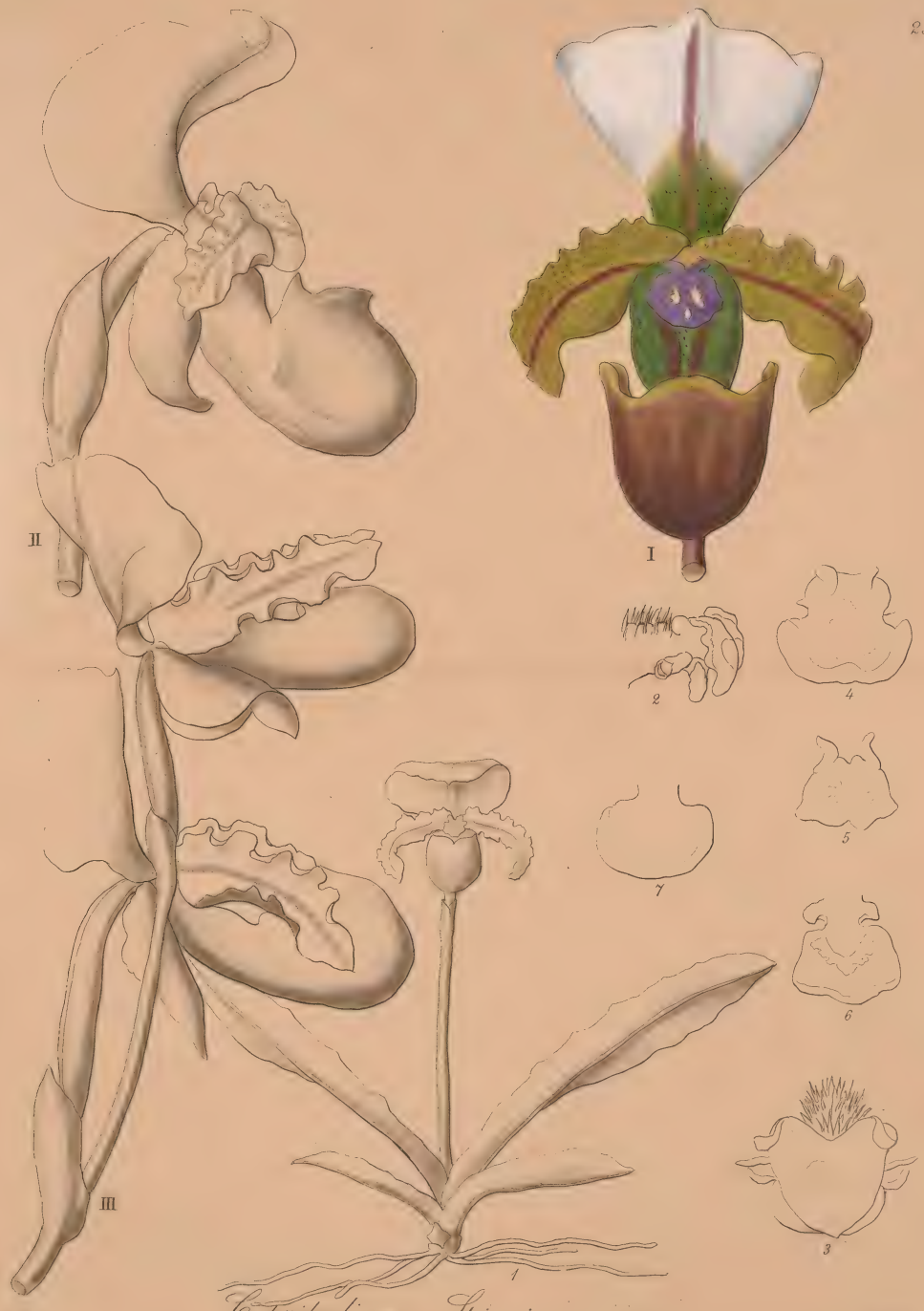
(Appeared Sotheby's. Nov. 1. Gard. Chron. XIX. 432. Gaston hybrid.

Leaves 1' long or more, strap shaped, tapering pointed & spreading. Scape taller than the leaves; bearing densely pubescent, bearing about 5 large & highly coloured flowers with conspicuous glabrous, semiovate, yellowish subfleshy bracts, becoming smaller upwards; greenish, blotched with purple. Flowers large, solitary, very distinct in aspect; sepals ovate, 2" long & 1" broad downy at the base on both surfaces flushed with rose & finally veined with olive-green, the central & lateral veins tinted with rose, the lower one broadly ovate obtuse concave, petals deflexed about ½" long, ½" broad at the base especially on the lower side, the hairs deep purple; lip large, 1" broad & nearly 2" long, oblong, very obtuse, the opening about ½" deep, dark purplish rose or dull crimson, somewhat veiny with deeper rose, the anterior edge crenulate, the broadly infolded fleshy edges creamy white with short stiff hairs. Staminode fleshy, transversely oblong, with a short claw, the front edge with a central apiculus, where it is received against the tongue-shaped lower portion, creamy white, with a whisker-like fringe of deep purple hairs behind & on the lower side a fleshy bluntly-triangular process having its upper surface hollowed out & set thickly on both surfaces with short stiff hairs.

Cypripedium Schroederae. Rchb. f.

F.D.Smith. Del.

Cypr. spectabile Sw.



Cypripedium Spicerianum Rchb. f.

6490.

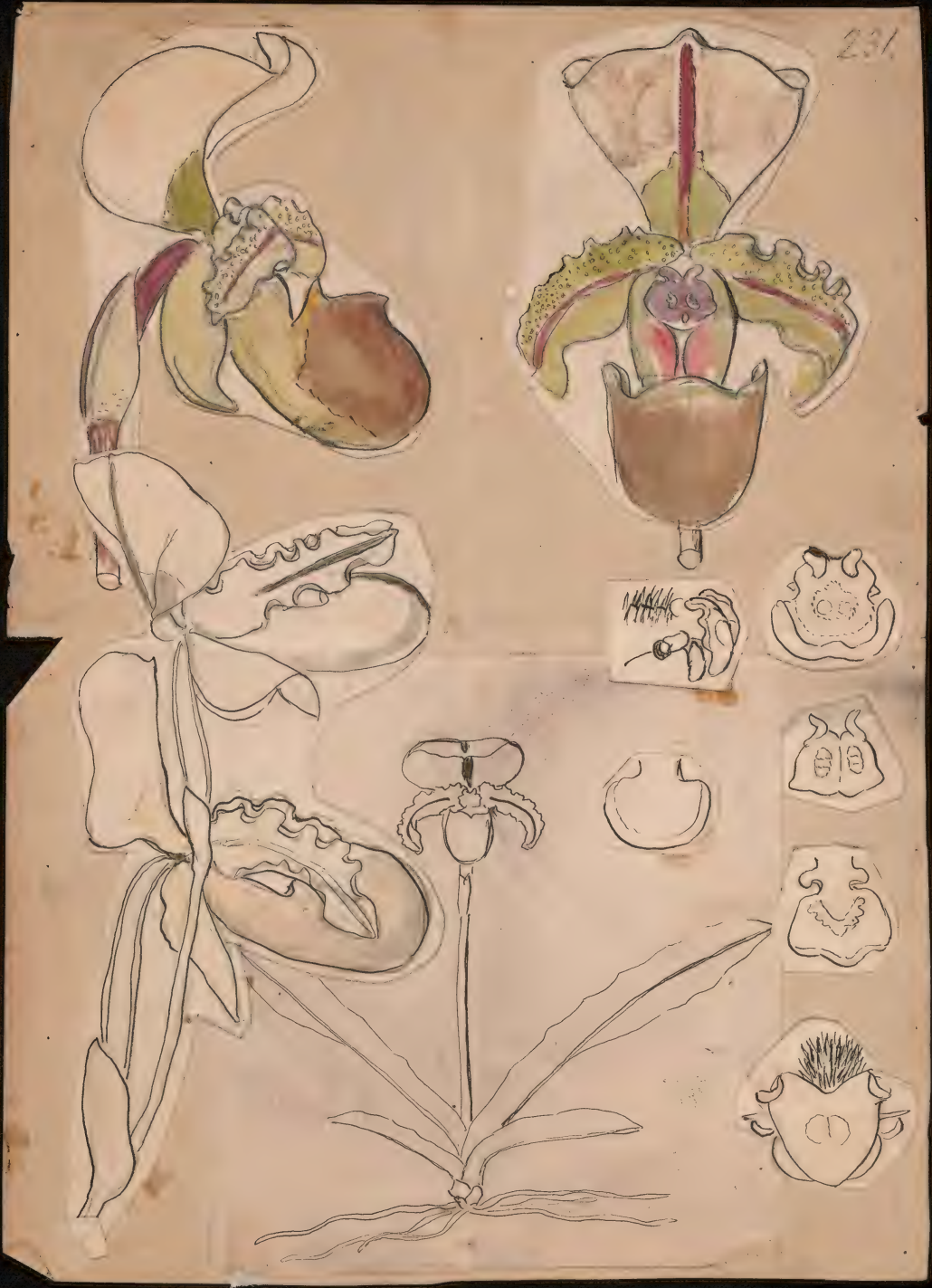
Cypripedium Spicerianum. Rchb. f.

Gard. Chron. 1880 p. 408 & 744 & xylogr. p. 41. sine descr.

Fol. distica. lin.-obl. subacut. carinat. basi complicat. luride viridib. scapo paberulo purp. gracili 1-flo. bractea obl. viridi purp.-striolata ovaria purp. paberulo multo breviore, sep. dorsali magno e basi erecto viscoseute recurvo in laminam albam porrectam late reniformi-rotundatam marginib. recurv. auriculaeformib. & apice complicato erecto dilatato, sep. lateralib. in unum late ovatum acutum labello subaequilum connatis, pet. brevib. deflexis lin.-obl. flavo viridib. & rubro striolat. marginib. crispato-undulat. labello saccato auriculis rotundatis saturate flavo-purpureis sicut vina late acuto. staminodio rotundato laete purpo marginib. alb. recurv. columna viridi.

F. J. H.

Herbarium
Fr. Kränzlin



Herbarium
Fr. Kränzlin

Bot. Mag. 6490.

Cypripedium Spicerianum Rchb. f. Gard. Chr. 1880
Indien (?)

8070
1906.

M.S. del. J.N. Fitch lith. Vincent Brooks Day & Son Ltd Imp

Cypripedium Rothschildianum

L. Reeve & Co. London.

CYPRIPEDIUM
V.

Cypr. venustum Wall.

M. S. del. J.N. Fitch lith.

Vincent Brooks, Day & Son Imp.

L. Reeve & Co. London.

Cypripedium Victoriae Mariae.

Cÿprip. vexíllarium

Flore des serres. XIV. 1475.

Cypripedium villosum. Lindl.
Moulmein.

8126
(1907)

M.S. del. J.M. Fitch lith.

Paphiopedilum villosum Pfitz.
var. annamense Rolfe

L. Reeve & Co. London

Vincent Brooks Day & Son Ltd. Imp

Sänding
C. Spicerianum ♀
× C. villosum ♂
C. Spicerianum
C. villosum

Tafel 282.

Cypripedium Wolsertianum Krzl.

del. Kränzlin.

12

332.

Selenipedium. Reichb. f.

Cypripedium vittatum. Vellozo. Flora flum.
Selenipedium vittatum. Rchb. f.

3(24)

334. Neuriedia. Bl.

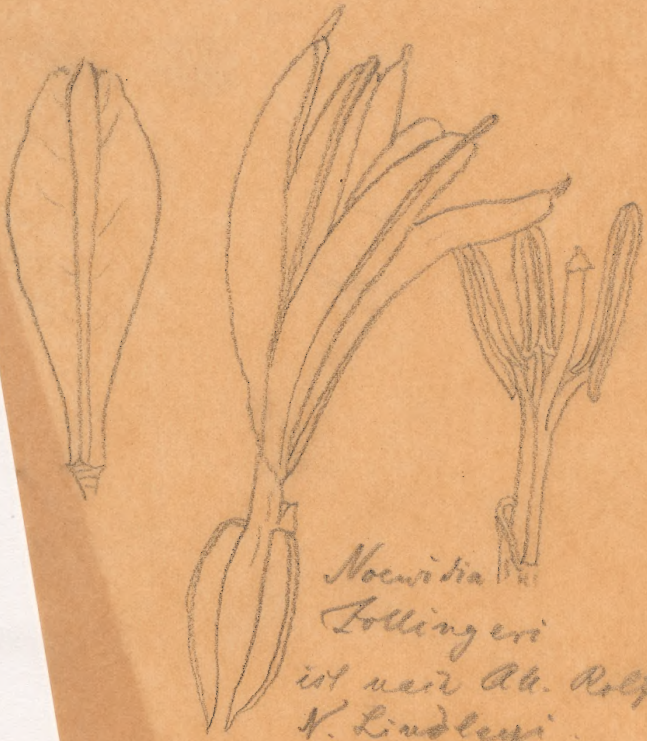
M.S. del. J.N.Fitch lith. Vincent Brooks, Day & Son Imp.
L.Reeve & Co. London.

Neuwiedia Lindleyi Rolfe

M.S. del, J.N. Fitch lith. Vincent Brooks, Day & Son Imp.

L. Reeve & Co. London.

Neuwiedia Griffithii Rolfe f.



Nocaista
Tollingeri
ist nur Ab. Roltii
N. Lindleyi

44(74 Wll)

38.

Eria